THE

Journal *of* Home Economics

Home, Institution, School

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THE
Journal of Home Economics

VOL. V. APRIL, 1913 No. 2

RESEARCH RELATED TO HOUSEHOLD ECONOMICS.[1]

SUSAN M. KINGSBURY.

Several of the programs of the American Historical Association during the past week have been devoted to the question of profitable fields for research. Such subjects have been discussed at previous sessions of this Association but never, so far as I am aware, has a series of meetings been given up to that discussion. Certainly no field has at present more reach nor is more in need of investigation than the subject of household economics, both as applied to the subject as a whole and as applied to any one of its phases. Therefore our subject.

In the business world, so called, individuals are acquainted with the minute details of their business, and in countless numbers of business houses the actual cost and profit of every transaction is figured to many decimal places. While the question of economics of cost and profit is not worked out in the business world, as a whole, satisfactorily, and certainly not in our public institutions nor in our government, a start has been made through necessity by the individual business man or the corporation. But in the business of housekeeping, whether on a small or large scale, no system has been devised by which costs can be known or a comparison of costs can be made, and I venture to say, that in very few institutions do we know actual costs.

Sometime ago through the senior seminar course in Simmons College we endeavored to find a satisfactory system of accounting for institutional housekeeping and to discover whether special systems

[1] Presented at the annual meeting of the American Home Economics Association, Boston, 1912.

were being used in various state and private institutions. We were unsuccessful. For example, one institution was endeavoring to find out the cost of food in comparison with the cost of housing. As a result the class was enabled to study very carefully the statistics it had gathered and then work out the cost of rent, light, heat, service, and food, endeavoring to distinguish between the service for lodging and the service for the dining room. But these figures could be at best only approximate because of the way in which bills had been kept and because of the difficulty of discovering a unit by which costs could be distributed. The difficulty in attaining these results and the necessary inaccuracy due to approximation is simply an illustration of the fact that we find no true economics of the household, that is, the knowledge of how to secure the best return for the least expenditure, because we find no system measuring return and no plan of recording expenditure.

These, then, are two of the large fields which an organization like the American Home Economics Association ought to enter, enabling the world at large to know what the measure of the return may be and what the system of expenditure should be. Such a program, worked at unremittingly for a series of years by individuals or graduate students or a committee of the Association, when presented would command the respect of all economics associations. They would perceive at once that such constructive work could not be overlooked.

There are, of course, minor fields which are clearly important for investigation, as, for instance, that field which deals with legislation as affecting the status of the household. The laws existing and needed for the regulation of the production of foods ought to be presented more carefully, more clearly, more forcefully than they yet have been. As for example, the laws affecting production of canned goods, ice cream, confectionery, baked foods, ought to be classified and simplified both for the purpose of instruction to our students in household economics and for the purpose of reference for our housewives. Then those laws needed for the regulation of the distribution of foods, as for example, of milk, of bread, of foods in shops, ought to be studied. And when all this is done, a body of knowledge should have been acquired from which to devise the best or most feasible laws and the right line of approach for each community. Then the ideal would be at hand. Standardization of the laws affecting the conditions under which our men, women, and children live is far more important than standardization of the laws affecting the conditions

under which our men, women, and children work. Just as our Labor Legislation Association has first stated carefully and presented to the public the actual laws existing and has then prepared a scheme for uniform legislation to be introduced into the various states of the Union, so this Association might well familiarize itself with existing laws affecting the production, distribution, and consumption of foods and as affecting the general conditions of living, and then educate the public to demand the best of such laws.

Before illustrating the methods by which a study of legislation might be carried on, we note that there are questions of administration which need investigation, administration as applied to the home, administration as applied to business, that is, as applied to the places where production, or distribution, or consumption of food is carried on for profit by an individual or group of individuals, and administration as applied to the combination of home and business, namely, public and private institutions. Administration as applied to individuals is also a field most important for study—individuals in their private capacities as producers for the home and as consumers in the home. Administration as applied to any of these four groups should be worked out on the basis of the system of organization, studying the question of supervision, service, methods of buying and systems of accounting —of keeping a record of what is bought, when it is bought and where it is bought, and the grade of satisfaction. Such a system of accountancy would then enable us to determine the efficiency of the institution or of the individual in the business of living. One of our greatest needs of the present moment is some sort of an account book worked out and tested by institutions, as for instance, in our own dormitories. Although it may seem at the moment a large expense, the need is to discover whether such a system of accounting is a saving or not. To the individual an account book is often considered not worth the trouble of keeping, the return not equal to the effort. And he may be right. For the institution, I believe that the theorist from the department of economics or from the department of household arts cannot determine the question. It must be worked out in an institution as a laboratory.

With regard to values: it is hardly necessary to urge upon this group the necessity for fuller knowledge of values as applied to textiles or foods. Thousands of various opportunities flash to our minds. Values in silk, cotton, laces, fabrics, furnishings, prepared foods of all types, canned goods, baker's bread in comparison with home-

made bread, baker's cake in comparison with home-made cake, cereals put up in packages as compared with cereals in bulk, and hundreds of others. These are questions we are all dabbling in, but the trouble is that we dabble. Such experiments as are being carried on by the government in various stations have returned large profits but the difficulty is that the investment is too small. We need to stimulate our students and our teachers and most of all our housewives (who must first be educated) to more careful record-keeping concerning all of these questions, and then it will be the business of this Association to interpret the returns.

May I now call your attention to some beginnings of such studies which we have made in Simmons College but only as an example of how fruitful an investigation of this type may prove. We have a course entitled the Economics of Consumption. Our first question is, What does the state say with regard to the affairs of the household? So our starting point is the study of the relation of the household and the housekeeper to the law. We have, therefore, worked out in chart form the federal pure food law and the laws of the various states of the Union affecting the regulation of lunch rooms, bakeries, or any food establishment and the requirements as to preparation of dairy products, ice creams, meat products, canned goods, and in addition, the milk regulations in the state of Massachusetts and the town regulations as to milk in Boston, in towns of Worcester County and in several large cities of the United States. We have also charted the municipal regulations with regard to preparation and sale of ice cream in Atlanta, Cleveland, New York City, Salt Lake City, San Francisco, Seattle, and Boston, and eight other cities of Massachusetts.

To illustrate: The charting of the federal law reveals three subdivisions:

(1) The definition of terms, such as food, drugs, adulteration, misbranding, and guaranty.

(2) The standards with regard to animal products, vegetable products, preservatives and coloring matter.

(3) The procedure under the act classified as to the agency for enforcement, methods of collection of samples, analysis, publication, procedure for accusation, and penalties.

Again, the regulations with regard to waitresses in the city of Boston were secured from thirty establishments and the data tabulated in such a way as to reveal: hours of labor—beginning and ending, hours allowed for meals, total hours per day, per week; the maximum, minimum,

and approximate amount received in tips, allowance for meals and laundry, deduction for breakage, vacation, and absences, and provisions for seasonal fluctuation; absences: average number and the methods of filling vacancies; duties: side work and required responsibility for number of seats at the tables; training: the agency through which the help was secured, the provisions with regard to recommendations, where skilled labor was obtained, the length of time for the employee to acquire skill, the attitude toward a training school, and the methods used for giving instruction; provisions for health and comfort; provisions for carrying trays; provisions for stools and rest rooms; and requirements with regard to uniforms.

A study worth continuing has been one with regard to the values of canned goods. In two successive years students have secured samples of canned vegetables, fruits, and meats in various sections of Boston and its suburbs and tests have then been made by the sampling process. The results compared both as to quality and as to cost have provided something like a white list. But more important, from the point of view of the student and the teacher, were the results which proved that price and value are not synonymous. For instance, the first choice in peas is found to cost 15 cents, the second 18 cents, while the maximum price charged is 18 to 25 cents and the usual 12 to 15 cents. In corn the first choice costs 12 cents whereas the maximum price charged is 14 cents and usual price 12 cents. In tomatoes the best value coincided with the maximum, 14 cents, which is two cents more than the usual price. In beans the best choice costs 17 cents whereas the maximum price is 20 cents, the usual price 15 cents and the minimum price 8 cents. Results of such experiments could not be printed until a sufficient number of samples of each brand had been examined to ensure a feeling of security, neither could they be published until a large variety of brands had been tested.

Without proceeding further with illustrations of the type of original work which needs to be done, and I may add which is possible to be done with seniors and graduate students, may I call your attention to a study from the point of view of the consumer which has been made, based upon the yearly expenditures of a group of the college girls. We must remember that we are concerned here with a selected group which is not to be compared with any other group of consumers, so far as I can see. A girl of college age and of the same circumstances as many college students, would probably be working and therefore earning, whereas the girl not at work would

have certain social responsibilities, and standards of expenditure would vary.

However, as an example of the method of approach to the problem of consumption this study may prove of value. The actual results I am presenting in full as being perhaps useful to members of this association who are coming in contact with college women and especially who may be interested in young women who are about to enter college. The study was made in four different years, 1907, 1908, 1909, and 1912, and is based upon the returns of between 40–50 students each year who were able and willing to give exact information, most of the dormitory students having been approached. In most cases returns which were not sufficiently complete were excluded and yet the variation seems to be such as to warrant a belief that the returns were valid and typical. Since these studies were made at different times a difference in treatment crept in whereby the average expense was considered in the years 1908 and 1909 and the mode was taken in 1907 and 1912. Traveling expenses have been omitted altogether but, as far as possible, expenditure for clothes in the summer vacation preparatory to entering college was included. In 1908 and 1909 one figure only was returned for minor expenses, including medical aid, amusements, eatables, carfares, church, telephone, Christmas, and incidentals. I do not believe it is of significance that the average return for 1907 is higher than for the other years. It will be noted that the students have taken the maximum figure for board as being the sum which the largest number paid. Since that time a larger number of rooms have become available in dormitories and boarding houses at the lower figure. Finally the lowest estimate as worked out by the students in two different years and corrected by the instructor is presented in order that no friend or parent may consider it safe to accept the minimum expense in planning to send a student to the college. While it would certainly seem that a student should be able to carry her expenses at about $500, the total as indicated in the lowest estimate, yet this should be compared pretty closely with the average expense in order that the student may not find herself embarrassed for the necessities of college life. It should be noted also that these figures apply to the girl who is living in the dormitory or boarding, and not to the girl who is living at home.

Expenses for college year. Based on average or on mode.

	1907		1908	1909	1912	
Tuition	$100.00		$102.65	$106.59	$100.00	
Board	300.00		286.36	280.37	260.00	
Laboratory fees	10.00				15.00	
Books	17.00		16.93	17.41	15.00	
Dues	1.50		4.48	3.62	3.00	
Clothes	125.00		91.37	106.98	110.00	
Laundry	30.00		29.47	11.77	15.00	
Medical aid	20.00				7.00	
Amusements	7.00				8.50	
Eatables	8.00				8.00	
Carfares	7.50	$92.00			9.00	$56.50
Church	3.50				2.00	
Telephone	1.00					
Christmas	15.00				12.00	
Incidentals	30.00		44.39	41.82	10.00	
Totals	$675.50		$575.65	$568.56	$574.50	

Expenses for college year. Based on maximum sum returned.

	1907	1908	1909	1912
Tuition	$100.00	$114.00	$128.03	$100.00
Board	300.00	300.00	300.00	300.00
Laboratory fees	20.00			16.00
Books	32.00	50.00	27.66	30.00
Dues	9.85	9.25	8.50	5.50
Clothes	200.00	225.00	600.00	220.48
Laundry	28.00	80.00	30.00	54.00
Medical aid	162.00	35.00	56.50	5.00
Amusements	27.00			20.00
Eatables	25.00			24.00
Carfares	28.50			8.00
Church				3.00
Telephone				
Christmas				30.00
Incidentals		143.25	266.00	50.00
Totals	$932.35	$956.50	$1416.69	$865.98

Expenses for college year. Based on the minimum sum returned.

	1907	1908	1909	1912
Tuition	$100.00	$100.00	$100.00	$100.00
Board	200.00	200.00	200.00	200.00
Laboratory fees	5.00			8.00
Books	4.00	2.30	5.00	11.72
Dues	.25	.60	.50	1.00
Clothes	48.90	14.00	5.03	50.00
Laundry	6.85	1.04	.25	7.82
Medical aid	2.00	.25		.50
Amusements	.35			2.00
Eatables	1.46			6.00
Carfares	2.58			9.00
Church				1.36
Telephone				
Christmas				6.14
Incidentals		11.54	15.70	
Totals	$371.39	$329.73	$326.48	$403.54

Expense for college year based on the study.

Tuition	$100.00	Amusements	$5.00
Board	200.00	Eatables	3.50
Laboratory fees	10.00	Carfares	5.00
Books	17.00	Church	1.00
Dues	1.00	Christmas	5.00
Clothes	90.00	Incidentals	25.00
Laundry	25.00		
Medical aid	20.00	Total	507.50

Most extensive knowledge and keenest judgment are needed for an understanding of production in the home for profit rather than for consumption. Whatever attitude our states may take with regard to this great question, the effect will be of great importance not only to the home in its social aspect but to the home as an economic factor. Whether prohibition or regulation, restriction or encouragement is adopted as the policy generally conceded to be the wisest, the education of woman as a producer will be very largely affected and much of our future policy will be modified accordingly. These are but a few of the problems which experts in household economics are being called upon to answer.

A COURSE IN CHEMISTRY FOR HOUSEHOLD SCIENCE STUDENTS.[1]

By J. F. Snell.

Macdonald College, Ste. Anne de Bellevue, Quebec, Canada.

The following outline of a course in elementary chemistry, specially designed for students of household science, is taken from an address to the science department of the National Education Association. The course has been given to five successive classes in Macdonald College. The students in these classes have been of college age (from seventeen years up) but of very unequal preliminary education. The course has therefore been made simple, and the writer hopes it may be found suitable for high school girls. The aim has been to introduce only such principles as find immediate application in connection with household work, but to present these principles in a correct and truly scientific manner. The expository matter of the course has been in the hands of the last two Macdonald College classes in printed form, and it is hoped that the full course, including directions for the lecture table and laboratory experiments, will soon be regularly published in text-book form.

The definition of *chemical change* is first discussed. Such familiar illustrations as the charring of sugar, the souring of milk, and the fermentation of fruit are used, in addition to those commonly preferred on account of their theoretical simplicity—such actions as the burning of magnesium ribbon and the rusting of iron.

Decomposition is exemplified, not only by such chemically simple changes as the effect of heat on limestone, and the electrolysis of water, but also by the effect of heat on sugar or starch, and the putrefaction of meat or casein—reactions with which the term *decomposition* is commonly associated in the lay mind.

Following the conception of decomposition, the student is introduced to the ideas of *element* and *compound* and to chemical nomenclature reduced to its lowest terms—the signification of the suffixes "ide" and "ate." Chemical notation is utilized, but the student is not required to master it. Reactions are commonly expressed in

[1] Reprinted from *School Science and Mathematics*, vol. 12, 1912.

words, as well as in symbols. The *atomic theory* is presented dogmatically and its relation to chemical notation pointed out.

Instead of next passing to a study of the elements and their binary compounds—as is commonly done in purely cultural courses—we pass directly to the definitions of *acid*, *base*, and *salt*. Hydrogen and oxygen having been prepared incidentally to the introductory topics of the course, it is not difficult to show by laboratory experiments that the substances called *acids* have not only a sour taste and a characteristic effect on litmus, but also liberate hydrogen when treated with metals. The formation of *salts* in these reactions can be illustrated not only by evaporating the solutions, but also by a lecture experiment in which concentrated hydrochloric acid is treated with sodium, and the purified solid product tasted by the class.

It is also possible to establish by qualitative experiments that the typical *base*, caustic soda, contains the three elements, sodium, hydrogen, and oxygen. The insoluble bases and basic oxides are then introduced, and the effects of acids upon them illustrated and explained. The rusting of iron and the tarnish of other metals are accounted for as due to superficial oxidation, iron oxide scaling off and exposing new surface, while zinc and aluminium oxides are adherent, and serve to protect the metal from further corrosion. The various artificial protective coatings for iron are discussed, and the virtue of prompt polishing of stained household cutlery impressed. The effect of oxalic acid and salt of lemons (acid potassium oxalate) in removing rust stains from fabrics is also explained here.

The conception of *strong* and *weak* acids is next introduced by experiments showing that normal solutions of hydrochloric and sulphuric acids attack zinc more rapidly than do the equivalent solutions of formic and acetic acids. The principle having been illustrated, the student is asked to memorize a classification of the common acids and bases, according to strength.

A laboratory exercise follows, which not only serves as a review of this classification, but also affords practice in nomenclature, and introduces the conception of hydrolysis. A dozen soluble salts are given out with their common and chemical names. The students dissolve the salts and record for each the reaction to litmus, the name of the corresponding acid and base, and the relative strengths of these acids and bases. Reviewing the record they discover that in aqueous solution (1) the salts of strong acids with strong bases, *e.g.*, sodium chloride, are neutral; (2) the salts of strong acids with

weak bases, *e.g.*, aluminium sulphate, are acid; (3) the salts of weak acids with strong bases, *e.g.*, sodium carbonate, are alkaline; and (4) that no salts of weak acids with weak bases have been given them. That the water has acted upon the salts derived from either a weak acid or a weak base can be made clear—at least for the case of a weak acid—by an experiment with soap. Dissolved in alcohol, a good soap is neutral to the indicator, phenol phthalein. The addition of water to the alcoholic solution causes the pink coloration indicative of alkalies to appear. The water has liberated a certain amount of acid and base, and the latter being strong has affected the indicator.

Hydrolysis may be defined as such action of water on a molecule as results in the production of two or more new molecules. In the case of a salt the new molecules formed are an acid and a base. But the general principle of hydrolysis is illustrated in many other reactions of importance in the household, and particularly in the processes of digestion of the three great classes of food constituents, proteins, carbohydrates, and fats. Hence the prominence accorded to a phenomenon commonly ignored in elementary chemistry.

The interaction of two salts, with the production of a precipitate, is illustrated by the action of soap with hard water. The topics of temporary and permanent hardness of water, and the theory of water softening are now in order.

Ammonia comes next, and serves as a connecting link between the alkalies and the alcohols. For ammonium hydroxide is an alkali, and can be classed as a base, if we slightly modify the definition of base originally learned. And familiarity with the ammonium radical prepares the student to accept the radicals of the alcohols.

Incidentally, uses and abuses of "household ammonia" may be referred to—uses of the material and abuses of the name.

The current of thought now flows smoothly into the regions of organic chemistry. Alcohols are the hydroxides of radicals composed of carbon and hydrogen. Like alkalies, alcohols react with acids. The products of such action are water and esters. Fats are esters. Like salts, esters can be hydrolyzed. The hydrolysis of esters is accelerated by the removal of any product of the reaction. The presence of a strong base results in the immediate removal of the acid formed in the hydrolysis of an ester. Hence saponification is simply the hydrolysis of an ester in presence of a base. Therein lies the basis of soap-making.

The dissolving of fats in such liquids as benzine is contrasted with their behavior on shaking with water. The difference is that between solution and emulsification. Both these processes are utilized in the cleaning of fabrics; the former in dry cleaning, the latter in laundry practice, where the marvelous emulsifying powers of soap solutions play a part of immense importance.

Fats, having been considered in the rôle of raw material for soap-making, and in that of dirt on fabrics, have now to be discussed as constituents of foods. Their presence in some foods is obvious. In others, such as oatmeal and nuts, it can be demonstrated by extracting the ground material with a solvent, filtering and evaporating. The use of benzine, rather than ether, as the solvent will be appreciated by girls of weak stomach.

Fat may also be extracted from the leanest meat, if water has first been removed from the tissues by kneading in strong alcohol. The proportions of fat in various foods is now discussed with the class, then the process of digestion and the energy or fuel value.

In studying the digestion of fats, which according to recent views is essentially a hydrolytic process, the student meets with an example of the effect of a ferment in accelerating hydrolysis. The same influence is later shown to be equally important in the digestion of carbohydrates and proteins, and is more readily demonstrated by laboratory experiments upon nutrients of these classes than upon the fats.

Following the fats, the carbohydrates are discussed. By placing solutions of typical sugars and polysaccharides in parchment dialyzers, surrounded by water, and allowing them to stand over to the next meeting of the class, the fact that only the sugars pass through membranes can be demonstrated. This explains the necessity of hydrolytic cleavage of the polysaccharides in digestion. The necessity for the hydrolysis of the disaccharides, cane sugar, malt sugar, and milk sugar, it has been my custom to leave unexplained.

The digestion of starch by saliva is, of course, easily demonstrated in the laboratory, and an invertase can be isolated from yeast and used to illustrate fermentative hydrolysis of cane sugar. Acid hydrolysis can also be readily demonstrated with cane sugar, starch, and filter paper. Incidentally to these experiments the student becomes familiar with the Fehling test for reducing sugars, and the iodine test for starch. The modification of the Fehling solution devised by Dr. Stanley Benedict (now of Cornell Medical College) I have found very convenient for laboratory use, as it is kept in a single bottle, and does not deteriorate.

Alcoholic fermentation and caramelization of sugars are topics of obvious interest to the housekeeper.

The treatment of the proteins, the most complex and therefore the most difficult class of nutrients, must now be faced. Their unique composition and functions must obviously be emphasized, and the wide divergence of properties among them must not be concealed. A few of the leading protein tests are learned by experiment upon isolated proteins, such as egg albumen, blood albumen, and casein, and are then applied to food materials, and also to the discrimination of silk and wool from cotton and linen. The digestion of proteins is illustrated by treatment of fibrin with pepsin in hydrochloric acid solution, and with trypsin in sodium bicarbonate.

To complete the discussion of foods, the composition of those of vegetable origin is contrasted with that of foods of animal origin. The leading exceptions to the general rule that vegetable foods are carbohydrate foods, and animal foods protein and fat foods, are recounted.

In the discussion of foods, fuel value has to be given prominence. Irving Fisher's mode of comparing fuel values and expressing the composition of foods recommends itself by its simplicity. It is of much greater value to know what percentage of the total fuel value of a food comes from protein than to know what per cent of the total weight is composed of protein.

Dietary Standards conclude the subject of foods.

The discussion of *combustion* I have allowed to follow that of foods, though it would be possible and might be advantageous to introduce it much earlier.

The course I have outlined occupies the time at the disposal of my class, which is made up of students taking a one-year course in household science, and having only a single two-hour period a week to devote to chemistry. Teachers having more time, or a better-prepared and better-graded class, can easily expand the course upon the same principle of selecting the theoretical matter appropriate to the household applications of chemistry which they desire to bring to the attention of the class. Whatever work is undertaken, the habits of careful observation and logical deduction should be fostered. Any household science course which does not promote the scientific spirit is evidently misnamed.

THE HOME AND SOCIAL EFFICIENCY.[1]

EVA W. WHITE.

Our educational system has been highly developed in this country in spite of the fact that it is open to criticism at several points. We have recognized that national wealth does not lie in natural resources as such, but in the intelligence and skill of the people, and in consequence we have developed a great democratic system of education. This intelligence and skill applied along the lines of action in our communities have made possible our prosperity. We are, however, in the progressive stage of demanding constantly increasing efficiency. It is not enough that many have contributed much. The question is how far has each individual contributed and what have been the results, judged quite as much by the social ideals, the political and industrial lives of our people as by material production? On the one hand, is our scheme of education adaptable enough, differentiated enough, to search out the greatest ability in a child in order to fit that child for his special place in the world? Is our training incisive enough so that our lessons grip in to the extent of being applied without being discounted by 90 per cent? On the other hand, do we pay enough attention to those elusive factors in education which are quite as important as the more tangible forms of instruction and which give the incentive for accomplishment?

Aside from any differences of opinion as to liberal versus technical training, it is coming to be pretty generally agreed that it is not right under our conditions to allow children to go through the elementary grades without some kind of instruction which touches the vocational side of life. All along the line courses of study are tending to become more varied and to be closely allied to the activities of given communities. The school is no longer an impregnable fortress, but is broadening its sphere so that it is coming into vital relationship with the entire round of the interests not only of its children but with the interests of those adults who are pupils in evening schools and other forms of supplementary education.

[1] Presented at the Annual Meeting of the American Home Economics Association, Boston, 1912.

Any student of social questions knows that we are in a period of industrial readjustment, of economic strain. Grave problems are facing us—problems of labor, of government, of immigration with the argument for and against its effect on the American standard—and in the background of all the discussion stands the American home. Questions of public policy react always upon the family unit. Talk in as large terms as we may, there is no getting away from the family and that relationship which exists between father, mother, brother and sister. All our institutions are upheld and are conditioned by the general level of family life. Politicians may talk in terms of public policy; business men, in terms of trade; educators, in terms of educational theory; economists, philanthropists, theologians—each from his own standpoint—but they will all fail to hit the mark unless consciously or unconsciously their arguments are shot through with an interpretation which has come to them as the result of a wide-range contact with family circles. The only reason for all our effort is the good of the individual, the individual in association, of course. Infringe in the slightest degree on the rights of the home, and no amount of outside patching will make amends. The brains, bodies, the characters of our children cannot be developed to the highest point except by giving the widest opportunity to the home. We sometimes lose the issue in our intense absorption in a special line of endeavor. Every thing seems more important than the home. The inventor working to perfect a machine thinks only of the mechanism. He does not make the connection step by step through industry to the individual, then on to that individual in the natural group of which he is one. Those who are primarily interested in the home should, it seems, bring the proper perspective to bear on world issues in the light of the home.

This paper centers about the broadest possible interpretation of the sphere of the homemaking or domestic science specialist. There is no calling more inclusive in its scope than that of homemaking. Those who stand for the home stand for the institution which is the great contributing institution from one generation to the next. The home stands supreme as the pivot around which whirls every circle of activity and is the gauge of any given time. All kinds of schemes for advancement may be put forward but unless the home is functioning efficiently, efficiency is itself impossible, absolutely. There is not a single institution which can make up for the incomplete home. The social worker is baffled again and again in situations unless the

home can be stimulated to use its leverage. All of us have at one time or another had to do for children who have come from chaotic homes, and we have had to face the tragedy that no amount of after training can rub off the ear marks of that early experience. Why is it that so many wayfarers have been in orphanages? Why is the infant mortality rate higher in infants' hospitals than in even the unsanitary home? Hasn't a member of the poorest family you know an advantage over the person, who though less worried by economic strain, has no ties of kin? Read some of O. Henry's stories describing the lonely "single dwellers" in New York to sense the keenest pathos.

A district in a city, a district of extreme congestion, many basement dwellings, hundreds of dark rooms, family after family living in alley tenements where not a ray of sunlight penetrates from one end of the year to the other—the clutter of the district, to say nothing of the filth, is repulsive in the extreme—nevertheless from this district is drafted a considerable proportion of the workers of the city. Business man after business man complains of the inefficiency of the employee. Everything is to blame—the individual, surely; the school system which does not justify its expenditure if it cannot at least develop concentration. Trade school? There is no initiative in those who are trained. "In these days," says an employer, "in spite of our tremendous scientific plans for developing the man who will take responsibility and forge ahead, workmen do not take any interest in their work." We must admit that all of this is true in many instances. There is a lack of pride in doing a task well, a lack of that recurrent, stimulating satisfaction which comes from joy in a task and from the successful accomplishment of the task. Our training does not give back to us results proportionate often to the expenditure, and it never will unless we acknowledge that the dynamic to bring about a better order of things lies in the home. Consider a boy or girl in a city living under conditions similar to those described. From babyhood—what? Not even the sunlight necessary for the hot-house plant. Good red blood is a factor in efficiency. When consciousness of motives is dawning in the child mind only the struggle for mere existence is sensed. Father and mother are deadened to the point of accepting a treadmill succession of days; uncouth manner; lack of demonstrative affection (often a defence to shut out emotion which might make less easy the tenseness of the struggle), stand for the child as the accepted manner of life. The sharp words, the taunts—not really as bitter as they seem, let me say again—yet to the child

they become the example of the way a mother and father address each other. Does success lie entirely in concrete training or does something of outlook on life enter in? Culture? The unconscious effects of beauty of surroundings, of the cultural elements? What chance have thousands upon thousands of our boys and girls to gain that first refining influence of the home? We shall never get that attitude of mind which causes a man to appreciate the significance of his work unless the home ceases to be stunted and unless culture is democratised and through the home subtly trains the child to appreciate values in life. We are wasting time, expending effort to no purpose in our attempts to get efficiency unless we can bring life in its most abundant form within the comprehension of all workers. It is for the homemaker to strike the truth in this matter of efficiency, to point out the irony in expending large sums of money, to say nothing of the human effort involved, in our public institutions of learning when the whole is undercut by allowing men and women to become physically enervated by slum conditions so that efficiency is by that very fact shut out at the start. The possibilities of any system of education are limited by the physical status of the people to be taught and by the mental qualities of intellect and imagination which give the vision that stimulates a man to persist at his work. The mental and physical characteristics cannot, taking people by and large, be disassociated. Now one weak home on the basis of parents and three children, supposing the three children marry and each has three children who pass on the same inability, has an influence so far reaching we do not care to think about it. The fact that we are so exphasizing efficiency means that we have caught the vision of the tremendous future we have if we can at least eliminate the handicaps of environment. We are inclined to talk in very scientific terms about the effects of environment on posterity. It is a far-reaching theory—the direct effects of environment—but most of us can be quite content to turn our attention to the results to be gained by simply multiplying the number of clean, well-run homes by one, two or three, and by doing what we can in the way of making public service such that homes can develop. When the business man faces us with his inability to command efficiency, let him know that the fault is largely his through the direct misuse of his franchise. Tariff is of more importance than any so-called humanitarian measure which too often is put in the class with good-will offerings and is not considered from the standpoint of business necessity. The Industrial

Workers of the World do not talk in terms of high finance and international relationship or involved theory. Their appeal goes straight out in terms of the welfare of women, children, the home, and because of the vividness of their argument, much as we may censure phases of the movement, they have made us stop and think. We are at fault, are we not, if when we stand for anything as vital as the home, we let a single opportunity go by for as telling an argument as we can put forward? We should court the experience of knowing home conditions, the homes of the unskilled in the mining town, in the manufacturing community, and industrial districts of our cities, as well as the homes of the skilled workers and the rich in the same communities. We are not working for homes in any one city, but for the national ideal of home. We are not concentrating our attention solely on educating the immigrant or the ignorant to an appreciation of right living. We are trying to develop the highest conception of homemaking in every grade in society and I am not sure that we could not for a time leave the poor man out and consider the home standards of the more favored in society. Homemaking has to do not only with the physical management of the home but with those spiritual phases which make home. Now in a country where social capillarity plays as direct a part as in this country, those who are, so to speak, at the point to which others are striving, have a responsibility indeed. Must a family keep a maid in order not to be socially ostracised? Is housework so demeaning? Must young people at the very start live in a certain section where rents are high because everyone rushes to the same district, to escape the sympathy of their friends, or put off marriage until it is possible to live with the same luxury of surroundings to which they are used? How about the qualities of—just manhood and womanhood? Yet, truly, the attitude of mind is such in regard to some of these questions that it takes real character and considerable stiffness of backbone for young people to stand by real home values.

Clearly, it is not enough for the person who is interested in homemaking to know merely the technical processes of the home. The management of the home, on its material side, is only one branch of homemaking. There is the element which has to do with the involved problems of the housewife as a producer and consumer. Then there is the element which has to do with the moral factors of the home. Thirdly, the home cannot be detached from the community but must be interpreted in the light of its relation to its neighborhood, city,

state. What is our attitude toward divorce, diminishing birthrate, eugenics? Have we carefully thought out the interdependence of the home and the community? Do we see clearly the wide influence of the home, the power of the housekeeper? In the field of social reform alone, if the housekeeper would refuse to buy a single article made by child labor, how long would child labor be an issue? Pure food would not be as rare as now if women would take a stand in the matter. As civilization advances, grows more complex, the relations of individuals become more inter-related and they become more and more dependent on the community. Have we the argument gained from woman's contribution to the home to foretell the responsibility the woman's movement is to place upon woman? Aside from any question of suffrage it is daily becoming evident that woman, because of the function of the home in a community, is called to use her talents outside the home in the realm of public affairs. Woman in the home has made her unique contribution by virtue of her special feminine qualities. In the field of world affairs, I am one who believes that woman there will make her contribution along the lines of her special fitness, as in the home, and assume a large responsibility in warding off dangers from the home and in working for constructive issues to upbuild the home. Woman's place in industry is not to be neglected. Statistics show that an increasing number of women are entering industry, but it is also shown that the majority of them sooner or later retire to home life. This situation presents, then, a double problem; woman must be trained to industrial efficiency, and she must also be trained for her ultimate place as homemaker and mother. Industrial occupations must be gauged by their effect on woman's position as the preserver of the race. Hence we homemaking specialists must know industry well.

Now there are two ways of working for the home. First, through our educational system, and second through every public avenue that gives us an approach to the home. We must clear the way so the normal home can develop by standing for decent housing, more equitable wages, shorter hours of labor so that men and women shall have leisure to enjoy home life, as has been pointed out, and we must persistently educate public opinion by means of periodicals, clubs, popular lectures. If we grant that efficiency springs from the home and is conditioned by the home, then home training should be the correlative center for education and this basic teaching should be related closely to the pupil's experience. The result of such teaching would be that

the children who pass through our schools would sense the humanistic value of their training and would get an understanding of social and economic relationships. As a body of persons interested in the broader aspects of domestic science we should endeavor to have the homemaking subjects wind in and out through cultural or industrial courses of any kind. The teaching should be virile and adapted to the specific needs of the persons taught as regards race, occupation, locality. Blanket courses of studying covering all parts of a city leave much to be desired in the way of effectiveness. Courses which teach just cooking or some phase of sewing need to be expanded. That instruction should be adapted to the conditions of local homes is obvious. We want 100 per cent results if we can get them. In an Italian district it is ridiculous to teach nothing but American dishes.

The variety of foods among many immigrants tends to be limited. First teach children how to properly cook their own dishes. Such lessons will probably be used as most children in our industrial neighborhoods help in the housework. I have frequently gone into cooking classes where foodstuffs were used without any regard to local conditions. Teaching the children of men engaged in the heaviest kind of work "dainty dishes" is an absurdity. The coarser foods are the ones on which to concentrate. Cooking teachers should be fired to know their districts, there is such a wealth of wonderful material to be gained. They should use all ingenuity to make connections with the homes from which their pupils come. If teachers of household branches would only live in their districts for a time! The sacrifice is not as great as might be supposed.

Not only should we as members of this conference use every effort to have household branches expanded in our regular day schools, but we should use every means in our power to have incorporated into our school systems every form of supplementary homemaking instruction that community needs make apparent. Have courses of varying lengths to meet the demand of the mother, the factory girl, who because of home ties desires instruction in household subjects, the girl about to be married. The point is to raise the efficiency of as many homes as possible—even one degree is something—and by methods that are as telling as possible. Therefore we should try to meet specific needs. For example, a group of mothers needs to know something of infant feeding. They cannot spare the time to attend a series of 30 lessons, but 6 or 8 lessons could be arranged. Now the 6 or 8 lessons constituting a "unit course" meet a definite

need and accomplish a definite result. Great possibilities lie in the unit course if the groups can be kept small, and the teaching made illustrative and practical.

The home movement is gathering force, but much, very much, will depend on the women who are caught up by it within the next few years. We should try to attract to the work persons of large calibre. The home movement should be interpreted only by those who sense the richness of the calling, who see the possibility that exists in the instruction—yes, of boys as well as girls. Once arouse the inborn appeal of the home and that has been inbedded in character which though it may lie dormant for years will, I have faith, later do much in influencing the child in relations to the home. I know a factory worker, a spinner, who herself has had no advantages and yet who has a perfectly ordered home with a certain air of refinement. One day I said to her: "Mary, how can you keep so neat and attractive a home, working as hard as you do?" She looked at me a second and replied: "When I was a girl I decided to choose an honest man and give my children a chance."

For two generations, covering a period of seventeen years, a certain family have been a problem. The grandmother of the person in question was slovenly in the extreme. The mother was as slovenly and as bad a manager as her mother, and drank as did her husband also. There were four children from the union. The oldest boy, now 22 years of age, is constitutionally weak because of neglect in childhood. The next is a girl of 19 and is the one in whom we are specially interested. The third child suffered for years from a tubercular bone disease and died. The youngest child is delicate and almost constantly under the care of the district nurse. To return to the girl of 19; of all the children she seemed to have the most resistant constitution. She has grown to full womanhood, a fascinating, witty, auburn-haired person. As a small child and well into the teens she seemed the incarnation of all that is mischievous—yet there was a pathetically responsive side to her nature. She with the other children was frequently asked to the settlement house when things were bad at home. From these occasional glimpses of another kind of living she caught some idea of standard. Two years ago she married. Her furniture, although bought on the installment plan, is nearly paid for, and her expression "same as yours" when showing me her household goods means volumes. Direct examples from our home-making classes at Elizabeth Peabody House proving the effective-

ness of homemaking instruction, could be multiplied. I have seen entire family situations change because of the untiring efforts of a settlement worker to rouse the mother or a child to appreciate properly cooked food, cleanliness, order. Morality, one comes to realize, rests frequently on a sanitary, nutritive basis.

From homemaking departments in public schools, philanthropic institutions, wherever homemaking is taught, the appeal should go directly to the young as well as to the more mature, to their heroism, to stand as defenders and upbuilders of the home.

MANAGEMENT OF CHILDREN PREDISPOSED TO NERVOUSNESS.[1]

A Summary.

A few months ago, Dr. Barker of Johns Hopkins University read before the Public Health Conference of the physicians of Maryland a paper which will be interesting to all those who are directing the education of children, whether in the home or in the school, for, as Dr. Barker says, "There is a growing desire on the part of well informed people nowadays to make sure that the means of education they provide for their children shall be such that the nervous system will be protected and strengthened rather than exposed to over-strain and injury."

The paper shows the thorough knowledge of pathological conditions which we would be led to expect in so eminent a physician and teacher of physicians, but it manifests also a singularly sympathetic understanding of normal childhood. Here we find the specialist's firm, sure touch and also the humanitarian's broad sweep of interests. The child has been studied with reference to his possible need of cure, but even more than this, with reference to his preparation for bearing the inevitable stress and strain to which he will be subjected in his everyday life. He is to be guided and saved instead of being allowed to be shipwrecked and then rescued.

The section on food, fresh air, exercise, and methods of hardening the body to changes of temperature, in which the foundation is laid

[1] On the Management of Children Predisposed to Nervousness. Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University. *The Bulletin of the Medical and Chirurgical Faculty of Maryland*, March, 1911, Baltimore, subscription, 25 cents a year.

for the more original part of the paper, that on "psychic hardening," puts the stamp of the approval of an eminent authority upon lines of procedure that are followed by the majority of intelligent parents who can control the conditions of their children's lives, and who aim to train and not to pamper them.

"One fact which has become ever clearer as medical knowledge has advanced concerns the nutrition of the child. Faulty feeding in infancy and early childhood may lead to such impoverishment of the tissues and such stunting of growth that the ill effects can never be recovered from in later life. A considerable proportion of the intellectual and moral inferiorities among our people is fairly attributable to imperfect nutrition at this early age. Fortunately the public is now being so thoroughly educated to the importance of breast feeding for infants and of liberal and suitable diet during the early years of life, by family physicians and also through the excellent little manuals of Holt[2] (2), Starr (3), Griffith (4) and others on the care and feeding of children that it is not necessary to dwell at length upon the subject. Plenty of good simple food including milk, meat, vegetables, and fruit, with avoidance of condiments, coffee, tea, and alcohol is approved by all authorities.

"Many parents make the mistake of allowing the caprice of the child to influence its food. We now know the foods that are suitable for children and, knowing these, the children should be provided with them in suitable amounts and should be required to eat of them, largely independent of choice. The child that learns to eat and digest all wholesome foods and who is not permitted to cultivate little food antipathies makes a good start and avoids one of the worst pitfalls of life with which medical men are very familiar, namely, a meticulous anxiety concerning the effects of various foods, all too likely to develop into a hypochondriacal state."

While the writer deprecates the extreme measures taken by faddists to harden their children, he says that "a still greater mistake is made by those who over-protect their children and who fail to accustom their bodies early to cool baths and to exercise in all sorts of weather." In this, as in all parts of the paper, he seems to have in mind the people with whom the child must live in later life, as well as the child himself, for he discusses hardening as a means, not only of "giving him a tolerance of variations in temperature," but also of preventing him from "grumbling at the weather."

[2] The reference numbers refer to the list of references given on p. 135.

The "harmonious muscular development which is necessary for the welfare of the mind and of the nervous system" is best secured outdoors, "where children are led unconsciously to exercise their muscles more than is possible indoors." But such development must be secured in part through systematic, physical instruction, "particularly in cities and during the school year." A little book, entitled My System, by J. P. Müller (5), is especially recommended.

The hardening of the body is, however, more generally recognized as essential to health than "the steeling of the mind to bear pain and to ignore small discomforts." The second part of the paper, therefore, which deals chiefly with the latter subject has special importance just now. A few extracts are given below:

"Every child should undergo a process of 'psychic hardening' and be taught to bear with equanimity the pain and discomfort to which everyone sooner or later can not help but be exposed.

"Physicians who work among nervous cases realize how often the child who has been too much protected from pain becomes the victim of nervous breakdown later in life. I have seen many a woman who could bear great sorrow or suffer without flinching the pain of childbirth, who still had no tolerance for the little ills of life. In such cases, it is the idea rather than the sensation from which the patient suffers, and such abnormal ideas most frequently arise in those who have not learned in childhood to bear pain well or to adjust themselves without complaint to the disagreeable sensations and experiences, which are essential to a normal bringing-up.

"The boy who learns to tumble in the gymnasium, to stand the pain of boxing and fencing and wrestling, and to keep his temper while engaged in these exercises will have subjected himself to a training which cannot help but stand him in good stead later on in life. One reason why women are more prone in later life to nervousness than men, may lie in the lessened opportunity which girls have for psychic hardening in the games which they play and the life which they lead as children. Particular care should be taken with young girls who show any tendency to nervousness, to see to it that not too much concession is made to their likes and dislikes. Nothing can be more harmful to them than the gratification of caprice. Especially when a child shows a tendency to be nauseated by certain smells and tastes and to complain of noises or of sensitiveness to bright light, the family physician should be consulted and, providing no disease of the sense organs or of the brain is responsible, the process of psychic hardening should at once be begun."

After giving the records of two cases of hypersensitiveness among his patients, one, a woman who was completely upset by the "sound of her husband chewing at the table, or puffing his cigar," and another of a man who, at times, was totally unable to bear strong light, the writer says, "While in severe cases like these just referred to, the patients undoubtedly started in life with abnormal nervous systems, it is quite conceivable that a judicious hardening in early life might have prevented the later shipwreck. I cannot too strongly recommend, therefore, the acquisition of tolerance of disagreeable feeling-tones as early as practicable in life."

* * * *

"Still another manifestation, common in children, and fostered too often by the example of the parents, is vacillation. In one form of functional nervous diseases, indecision is a most prominent symptom. Parents should see to it that children are not exposed to a pernicious example in this regard. While there are some children of the 'hair-trigger' type, who have to be taught deliberation in the making of decisions, there are more who have a tendency to doubt and indecision, and should be taught that it is better after due consideration to make a decision, even though it be wrong, and to stick to it, rather than to remain undecided."

* * * *

"The control of the stronger passions is for some easier than the mastery of ordinary irritation, and nervous children should both by example and precept, be taught how to stifle irritability whenever it arises. So few adults have learned how to meet the daily friction that there would seem little chance as yet for the nervous child constantly exposed to a bad example."

The influence of purposeful adult lives upon the forming ideals of childhood could hardly be better expressed than in the following: In his book, entitled The Natural Way in Moral Training, Patterson Du Bois (12) emphasizes the importance of what he calls "nurture by atmosphere," by which he means the indirect education of the feelings, and John Dewey asserts that "The feelings and sentiments are the most sacred and mysterious part of the individual, and should always be approached and 'influenced indirectly.' More can be accomplished by the setting of a good example in enthusiasms, depreciations, reverence, and admirations than by direct preaching."

* * * *

"It is a serious mistake to lead the young child into experiences that belong properly to a later age. When children under ten years of age are made to travel extensively, to visit museums and picture galleries, to attend the theatre and the opera, they are introduced to entertainment wholly unsuited to their time of life and which they, in their immaturity, are entirely unfitted to enjoy. Later on, at an age when they should learn to know such things for the first time, the attractiveness of novelty is wanting; they are cheated of the pleasures which normally should be theirs. As Oppenheim well puts it, a 'child's childishness is its greatest asset.'"

* * * *

"Above all as a factor making for the health of the nervous system, the joy of work must be referred to. It is one of the greatest pleasures life offers; moreover, it compels concentration of attention, and protects from all the dangers which attend upon idleness. 'Education to idleness is education to nervousness.'

"Overwork must be avoided; neither bodily nor mental fatigue should be permitted in excess. Regular, systematic, enjoyable work, suited to the interests and powers of the worker, is the best tonic I know of. If the work can be in the country, rather than in the city, all the better, especially for those with nervous predisposition. The enjoyment of nature possible in the country, the opportunities for work in wood, field, or garden, and upon the river, keeping the worker much in the open air, exercising his muscles, drawing his attention away from himself and fixing it upon things outside—what conditions could be more favorable to the health and happiness of the nervous child? If the nervous children that we see in towns could be transplanted to villages and the country—away from the din and bustle of the city, its restlessness, its haste and its feverish excitements, what a host of advantages would accrue! The schools are growing ever better in the country; in many country districts they are now excellent. The movement which began with the New School of Dr. Cecil Reddie (15) in Abbotsholme, England, and which has led to the Landerziehungsheime [country home-schools] of Lietz (16) in the Harz and in Thuringia and of Trüper (17) near Jena should be followed and imitated in this country.

"In any case nervous children should not be sent to school too early; preferably they should start a year or even several years later than the normal child. And in the schools they should never be pushed ahead too fast; competition is dangerous for the nervous child. The mis-

taken ambition of parents who desire their children to head the class is often responsible for serious injury to health.

"Sleeplessness is always a danger signal. In children it is most often due to indigestion or to mental overstrain; occasionally to premature sexual excitations. If insomnia appear, and especially if it persists, the parent should consult a physician.

"Medicine, psychology and pedagogy are all concerned in solving the problem presented by the nervous child. These sciences have already made great conquests; what the future may hold for them, who will attempt to foretell? Let us avail ourselves of the knowledge we have, doing what we can to dispel the scepticism of the ignorant and at the same time avoiding the futile enthusiasm of those who believe they know all."

To this very valuable paper is added the following list of references:

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(2) The Care and Feeding of Children. L. E. Holt. New York, 1910, 4. ed.

(3) Hygiene of the Nursery. L. Starr. Philadelphia, 1894, 4. ed.

(4) The Care of the Baby. J. P. C. Griffith. Philadelphia, 1898, 2. ed.

(5) My System: Fifteen Minutes' Work a Day for Health's Sake. J. P. Müller. New York, 1905. English Translation by G. M. Fox-Davies.

(6) Ten Minutes' Exercise for Busy Men. L. H. Gulick. New York.

(7) Exercise in Education and Medicine. R. T. MacKenzie. Philadelphia, 1910.

(8) Physiology of Bodily Exercise. F. Lagrange. London, 1889. Also, Les Mouvements méthodiques et la "mécanothérapie." Paris, 1899.

(9) The Human Machine. A. Bennet. New York, 1910.

(10) Hysteriä und Neurasthenie. T. Ziehen. Article in Eulenburg's Real-Encyclopädie.

(11) Fear. A. Mosso. English translation by E. Lough and F. Kiesow. New York, 1896.

(12) The Natural Way in Moral Training. Four Modes of Nurture. P. Du Bois. New York, 1903.

(13) Educational Creeds. J. Dewey.

(14) Technisches und Psychologisches in der Beschäftigung von Nervenkranken. A. Grohmann. Stuttgart, 1899.

(15) Abbotsholme. Rep. Roy. Com. on Secondary Education. C. Reddie. 1894. Also, his book—Abbotsholme 1889–1899, or ten years' work in an Educational Laboratory. London, 1900.

(16) Emlohstobba. Bilder aus dem Schulleben der Vergangenheit, Gegenwart oder Zukunft. H. Lietz. Berlin, 1897. See also W. Frei's Landerziehungsheime, Leipzig, 1902.

(17) Das Erziehungsheim und Jugendsanatorium auf der Sophienhöhe bei Jena. J. Trüper. Langensolza. 1910.

SPOILED CHILDREN.[1]

A pampered, spoiled child is like a hope that will never materialize. The faintest wish of a pampered child is law. The supremacy of antique dynasties is heavy upon him. If he sleeps, the members of the household suspend the breath and hush the footfall. If he wakes, there is nothing permitted to interfere with his wishes. Does he care to play horse? The father bends his patient back and canters to and fro like a steed of the desert. Does he sneeze? Every window is shut, and adult cumberers of the earth long for repose. At the table, perhaps, he evinces a sudden desire to walk upon the viands. He plants one foot in the salad and with a dimpled hand toys with the mashed potatoes. He is removed from his playground by force, only through fear that excitement will make him ill, not out of respect for the sensibilities of the over-fastidious guest.

Many children are growing up into physical, nervous, and moral wrecks, because they are humored too much. There must not be so much emotional attention given to infants. Almost any baby in three months can be made an autocrat; and many children, before the end of their first year, have true nervous prostration from too much attention.

Children should entertain themselves and be less entertained by others. This will develop their minds and rest their emotions. We must observe them less and talk less about them in their presence. Otherwise we are sure to evoke a series of most vicious emotions which grow into habits that influence them in a wrong direction in after life.

We ought to stop trying to make young ladies and gentlemen out of children. To push them into responsible social life early is to develop emotions and cares, and subject them to tests and temptations that ought to be postponed for years.

The child who can endure disappointment, who can be "crossed" without a tantrum, and who habitually obeys, is building a bulwark against "nerves;" and the one who is not frightened easily, and has self-control and a budding courage, has nipped many serious illnesses in the bud.

[1] Reprinted from *National Food Magazine*, 34, no. 1, p. 19, 1913.

THE NEW CHILD LABOR MOVEMENT.

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What is the true purport of the new child labor movement? An inquiry among ordinary parents tends to show that there is grave danger of misinterpretation of the child labor laws. Legislation in defence of childhood is now common in practically all of the states. Thousands of boys and girls once employed in sweat shops and factories are being set free by legal requirements from this kind of heavy toil, and are thus being given the first step toward normal and healthy development.

EVERY CHILD SHOULD WORK.

But this new legislation does not mean that childhood should be relieved of all industrial practices. It simply means that the grasping greed of business shall not rob the child of his inherent right to play, to attend school, to associate happily with others, and otherwise to develop the best inheritances in his nature. It means that the work is to be subordinated to the child, not the child to the work; that the industry required of the child shall not be for the sake of the profits, but rather for the sake of his physical growth, his moral character, and his general discipline.

And so we would remind every interested reader of the necessity of giving the growing child the benefits of disciplinary work and industry. This country is now slowly reorganizing itself into an industrial democracy. The rights of the common man and the common woman were never before held so sacred. There is a country-wide effort to exalt common things and common practices, to give every worthy task and vocation an opportunity to rank up in point of worth and dignity. The child that is allowed to grow to maturity without being required to perform home tasks and duties, without being trained in the beginnings of one or more of the trunk lines of industry—that child is destined more and more to find himself poorly adjusted to the coming social order. Very soon it will reflect discredit, if not disgrace, upon the parent who fails to train his child industrially,

just as is the case today with the one who fails to train his child morally.

A New Problem for the School.

The public school must meet this new issue and do more to prepare the young for participation in the great industrial democracy now slowly coming into existence in America. The school must teach and explain and exalt common work and ordinary industry. Pupils are now to be taught early in life, for example, how to do plain housework, ordinary home chores, and how to lay hold upon the heavier industrial pursuits, as the status of their years and strength may warrant.

The teachers who have caught the spirit of this new age have hit upon a charming plan for making industrial teaching both popular and effective. They are giving school credit for home tasks in the same manner as they give for school tasks. The ten-year-old boy goes home at the end of the month with a grade card from his teacher showing his rank in arithmetic, reading, language and the like, and the next day he returns with a similar card from his parent showing his grade in tending chickens, horses or cows; in helping with the housework, in carrying wood and kindling, in delivering milk and running other errands, and the like. The girl pupil carries home a similar score-card from her teacher and returns with a like report from her parent. Perhaps she has a grade in dishwashing, caring for the baby, doing the bedroom work, darning her own stockings, mending her own clothes, and the like. The school grades and the home grades are averaged and the pupil's standing is thus made out and recorded.

So the school vitalizes its teachings and awakens a vast amount of interest and effort in the field of common work-a-day achievements. As a consequence there is much comment at home and at school upon the several newly required tasks. There is praise for efficiency in home industry, and there is blame for remissness. The do-nothing boy, no matter how smart in mere book lessons, is shown up to a disadvantage. He is ranked proportionately low in his final grade and is made ashamed of his unworthiness in respect to industry.

School and Home Coördination.

As certain as this good world moves, and has its being, there is here suggested a great call to the parents and teachers of America to rally together and coöperate in bringing up a new race of men and women

—new in respect to their attitude toward the world's work, new in their sympathy and fondness for the world's great productive industries, new in their fullness of respect and love for the toiling masses of humanity, and new in their quickened sense of the beautiful good-fellowship that is possible only to those who have been trained to expend some of their energies in the performance of plain, honest, ennobling work.

Teachers and parents must come closer together. They must form home and school leagues or associations, they must assemble at convenient places and talk over their mutual child-welfare problems. It will be found profitable in every sense of the word for teachers and parents to meet once or twice a month at the school house for a full afternoon program during which the children will be turned out to play under the guidance, perhaps, of some able adult leader. Thus, through the medium of heart to heart contact, will all who are interested in the new humanity and the new industrial democracy find ways and means for contributing their part toward its realization.

THE INTRODUCTION OF HOME ECONOMICS IN A SOUTH CAROLINA RURAL SCHOOL.

ANNA L. LEGGETT.

Winthrop College, South Carolina, is carrying on many interesting experiments of various kinds. One feature which especially claims attention is the experimental rural school, conducted on the edge of the campus. This school is presided over by an unusually capable woman, a veritable genius in directing and controlling the many lines of work that are carried on in an ungraded rural school.

The various industrial departments of the college are working out a course of lessons, presenting the respective subjects and correlating them with the grade lessons. The aim is to make them practical for the average rural school teacher in giving the children an all-round education, developing personal efficiency by teaching hand and brain to work in perfect harmony.

The head of the domestic science department is personally conducting the cooking lessons, demonstrating their relation to the other subjects; for instance, figuring out the number of quarts of peas planted in the gardens, the number of quarts after the crop has been gathered, and how many shelled peas there will be from a quart of unshelled

peas. The children also locate the states on the map where certain commodities are produced.

Last year the children in this school prepared one hot dish each day for their noon recess, instead of bringing a cold lunch from home (many of these pupils come four miles in the stage which is provided for them). They had the option of bringing two cents per day or some material suggested by the teacher to be used for their lunch, such as hominy, buttermilk, potatoes, apples, and so forth. The majority preferred to bring the food stuffs, as ready money is not always available in the farmer's home.

This year, however, the systematic study of food principles and of the composition of foods was taken up, and three lessons a week, one hour in length, were allotted to the cooking lessons for the first term. Two lessons per week for the second and third terms will be given.

The children have school gardens where the material may be obtained. Cost is a great item and is very carefully considered in each lesson. Often the cost of the dish prepared is computed and its adaptability and suitability for home use are discussed. A report is requested as to whether the parents will consent to the child preparing the same dish at home at some convenient time. Coöperation with the home is emphasized whenever possible. The first lesson of this term was given on canning pears, which had been sent as a contribution for the cooking lessons. The children studied the composition of fruits, located on the map the sections of the country where fruits abound and then canned the pears. The other methods of preserving foods—pickling, drying, etc., were next taken up. Fruit was dried, jelly made of the skins and cores; cabbage from the gardens and a beet brought from home were pickled.

The cooking lessons furnish subject matter for number work, and new words used in the lesson are taken up in spelling. Copying of recipes is given as a part of the written work, and the making of a cover for the recipe book is made a part of the occupation work in designing.

Good housekeeping is taught with each lesson, but the children's training from last year was so systematic that very little extra time had to be given to emphasize this. The boys take great pleasure in washing the dish towels and pinning them straight on the line. The arranging of the kitchen cupboard is the girls' special care and delight.

A study of potatoes, white and sweet, was made from those grown in the school gardens. A microscope was used to show the starch

grains to the unbounded delight of the children, and the proper cooking of starch was next emphasized.

For Hallowe'en the children popped corn and parched peanuts grown in their gardens.

A Norwegian prune pudding was made in this series of lessons as an appropriate dish for Thanksgiving, and also as a review of the cooking of starch and dried fruit. Another attractive and inexpensive dish made by the children was a nut loaf. Nuts are plentiful in South Carolina and the children contributed some they had gathered in the woods, which lessened materially the cost of the loaf.

The study of corn will be taken up as soon as the children have visited a mill and have seen the grinding process, as the school is taking up the study of Hiawatha and primitive life.

Thus the lessons will proceed, arousing the interest in the bettering of home conditions especially in regard to the economical spending of the family income for food, shelter and clothing; learning to conserve the products of the farm, thus raising the family standard, and dignifying woman's position in the home.

LENGTH OF LABORATORY PERIOD.[1]

B. R. ANDREWS.

Secretary of Household Arts, Teachers College.

Some time since I received an inquiry from the principal of a prominent eastern high school to the following effect:

> I am studying the proposition of introducing single periods of forty-five or fifty minutes in place of the customary double periods for work in household arts, drawing and shop-work. I am writing to a few schools to see what experience they may have had. I understand that some have tried the plan of single periods, being induced to try it on account of the semi-annual promotions and subject promotions. That is what gives the problem to me. It occurred to me that perhaps you or some of your associates at Teachers College may have some facts already at hand that would be of assistance to me, and I am writing this letter to ask if you will inform me of anything that you may know; and, if you will kindly do so, pass on my inquiry to other departments of Teachers College which may be able to give me the desired information. I shall appreciate a reply at your convenience.

[1] EDITOR'S NOTE.—The question of the length of laboratory periods is one that is of much interest to schools and colleges throughout the country giving courses in home economics. The JOURNAL will be glad to have comments and suggestions from its readers as to the results in other institutions of the single and double period.

This inquiry was referred to a number of instructors in our departments of household arts and industrial arts whose replies are given below as of possible interest in other institutions where the question of the length of laboratory period in household arts is still an open one.

Miss Amy Logan, of the Horace Mann School of Teachers College:

In the Horace Mann School there are double periods for the cooking lessons; in the fourth and fifth high school year there are forty-minute lecture periods in household management which are successful; but for practical work a one-hour period in the high school is all too short because of the necessary loss of time in directions and cleaning. With single-period lessons it seems wisest to devote one entirely to theory and discussion but I find the interval that elapses before application disastrous, especially when in the following period of laboratory work there is no time for review.

Miss Anna M. Cooley, Professor of Household Arts Education:

It has been my experience and observation that it is almost impossible to conduct classes in household arts and drawing with only fifty-minute periods. By the time the lesson is properly presented and the work distributed and incidental help given to individuals it is almost time for the work to be put away at the end of the half hour, and it is hardly worth while to spend but fifteen or twenty minutes in the actual sewing. Of course this arrangement is not true of all classes, for the time allowed for presentation of work would vary from day to day. I believe there is economy of time arrangement of double periods for work and I am conscious always of the great waste when we are compelled to divide our work so as to have only fifty-minute periods.

Miss Helen Kinne, Professor of Household Arts Education:

I want to put myself on record emphatically for the double period in cookery, housewifery, and laundering. We have been forced this year to give the cookery to a high school class in an hour period. It is thoroughly unsatisfactory. It must be evident on the surface that certain of these processes from their very nature consume a definite amount of time that cannot be shortened. Many typical and really fundamental processes have to be omitted if a shorter period is used. Both instructor and pupils suffer from a sense of pressure and haste. It is almost impossible to do the work intelligently. An hour and a quarter is the very shortest time that is practicable. My feeling is so strong in regard to the matter that I am inclined to recommend dropping the work in these subjects if the necessary amount of time cannot be allotted. In home nursing, and in the theoretic work in sanitation and dietaries, the short period is possible.

Mr. William Noyes, Professor of Wood-Working:

I think it would be a great mistake to shorten the periods. Better to *lengthen* them. Every change that we have made *lengthening* the period has been of great advantage.

NUTRITION AND DIETETICS FROM THE STANDPOINT OF PHYSIOLOGICAL CHEMISTRY.[1]

JUDAH LEON JONA.

NOTE: Questions of dietetics are commonly discussed in their chemical relations and less commonly in their physical aspects. Notwithstanding the great progress which has been made in physical chemistry in recent years, the applications of methods and results to nutrition have not been very numerous. Perhaps one of the best known examples of physical chemistry applied to food matters is the use of a method for determining the purity of milk which depends upon the variations in the freezing point of pure and watered milk. An interesting paper has recently been published by Judah Leon Jona, assistant lecturer in physiology in the University of Melbourne, Australia, which has to do with osmotic pressure in the living body. In addition to reporting the osmotic pressure in a considerable variety of food materials and an extended study of the comparative cryoscopy of the blood of land mammals, crustacea, etc., the author discusses osmotic pressure in relation to nutrition, a starting point being the theory that life had its origin in the sea and that the body fluid of animals still retains physical characteristics of the solution in which life began.

Extensive quotations from Professor Jona's paper follow.

The primitive form of life from which all present existent form, of animal life are derived was, according to the Darwinian theorys a unicellular organism, analogous to the *Amoeba*, which, undoubtedly, lived in the ocean. From this form were evolved the simple coelenterates, and ultimately animals appeared which contained in their organization a closed cavity which contained a fluid undoubtedly derived from the environment, the ocean. This closed cavity and its contained fluid were ultimately destined to become the circulatory system and the circulating fluid (blood) of the higher animals.

When these primitive animals left the sea and took to an estuarine life as a preliminary to living in the mud and, ultimately, on dry land, they took with them, contained in this body cavity, a fluid which had the same chemical composition as the ocean, their original home.

In the future evolution of this type of terrestrial animal, it is legitimate to postulate that the composition of this fluid remained about the same, and thus the animal, its cells attuned to a fluid com-

[1] From the paper, "Osmotic Equilibration in the Living Body," by Judah Leon Jona. Proc. Roy. Soc. Victoria, n. ser., 24, 1911, no. 2, pp. 230–232, 232–235, 239.

position, and by its terrestrial life removed from any chance of being exposed to any alterations in the composition or concentration of this circulating fluid, was given every opportunity of ascending in the scale of evolution.

We have here the first example of standardization in the body, one of the principal stepping-stones to the proper and efficient evolution of the individual and race, a process well exemplified in the high degree of standardization met with in the higher animals, not only of the osmotic pressure of the blood, but also the chemical composition, salt ratios, surface tension, and viscosity of the blood, as well as standardization of body temperature, rate of heart beat, and rate of respiration; the higher the animal the greater is the degree of standardization of its various functions. . . . .

With what mechanisms, then, is the animal organism endowed which enable it to oppose environmental influences affecting the osmotic pressure of its blood?

We know that one of the chief functions of the kidneys is to maintain the osmotic pressure of the blood constant, and, since in the mammal (for we know more of mammals and are better able to study them) there is a constant drain of water from the blood to supply the sweat and saliva, both very watery fluids (all other secretions being more or less isotonic with blood), the kidney is normally called upon to secrete a fluid whose osmotic pressure is generally very much above that of the blood. In this connection the results of Sommerfeld and Roder[2] are of interest. The osmotic pressure of the urine of a suckling fed on different milk diets was determined, and it was found that on a diet of full cow's milk the urine had . . . . an osmotic pressure, or Δ as it is designated, of 0.736°C., and on its mother's milk the urine of the suckling gave a Δ of 0.746°C. But there is another means at the disposal of the organism, and that is by allowing entry into the alimentary canal of foods whose osmotic pressure is not above that of the blood, or in the case of sea animals (teleosts upwards), where this is not possible, either the non-absorption of the extra saline constituents of the sea water, or if the absorption of these substances does take place, their elimination by the kidney. Bottazzi[3] has shown in the case of the marine teleosts that the latter process takes place, but whether marine mammals have adopted this practice, or whether they simply do not absorb the excess of salt (and thus of necessity do work against osmotic pressure), has not been

[2] Sommerfeld and Roder, Berl. Klin. Woch., 519, 21, p. 544, 1902.

[3] Bottazzi, Ergebnisse d. Physiol., 1908, S. 246, et. seq.

determined. . . . . But in regard to land mammals in general and man in particular, my own observations on the osmotic pressure of liquid foods throw some light on the subject.

It is generally admitted that one of the functions of the stomach is the establishment of osmotic equilibrium between the fluid food swallowed and the blood.[4] This it does by adding salts, etc., to hypotonic fluids, and by diluting the hypertonic. In the latter function the action of the stomach is aided by the salivary glands, which pour out a copious secretion of saliva. In one experiment cited in the appendix, 72 cc. of saliva were poured out in fifteen minutes during the process of chewing about 12 grams of barley sugar.

This function is no doubt protective, for the deleterious effects of exposing tissue cells to the action of hypertonic or hypotonic fluids are well known. The swelling up of, and interference with sensation in, and the function of the skin after prolonged immersion in water, and on the other hand the 'roughness' produced when a piece of confectionery is retained for a few minutes between the teeth and cheek, are common examples.

Of the foodstuffs ordinarily admitted to the stomach, the great majority are in solid or gelatinous or colloidal form, and to such substances the considerations of osmotic pressure cannot apply. The actual fluid foods admitted to the stomach of man are milk, the ordinary beverages, fruit juices and beef teas, meat extracts and soups, while in the case of the lower animals in the natural state, the list is very much shortened, since the ingestion of prepared foods is solely confined to man and the domestic animals. In tea, coffee, and cocoa there is usually a sugar addition which varies with the personal taste, but the Δ given by the contents of a cup of tea, as prepared for an ordinary individual, was found to be about 0.46°C. The Δ of milk has been determined by many observers, and is the same as the blood, 0.57 to 0.59. Of all the fluid foods admitted to the stomach of man, alcoholic beverages and fruit juices alone are hypertonic. In fact most of the fluid foods admitted to the stomach are hypotonic, thus containing a water excess which the organism readily avails itself of for purposes of 'flushing out' the system, and which also allows of the addition of hydrochloric acid in the stomach. Moreover, it may be safely stated that in no case is a fluid admitted in which the hypertonicity is due to the mineral ingredients alone, except under protest. The sense of taste stands at the entrance to our alimentary canal, and tests the food not only qualitatively but

[4] Bickel, Handbuch d. Biochem. (edited by Oppenheimer), Vol. III, part 1. S. 86.

also quantitatively from the standpoint of molecular concentration. To this function of the sense of taste we may give the name osmotactic, and it is undoubtedly to the possession by the sense of taste of this osmotactic character that the stomach mucosa is shielded from exposure to foods whose osmotic pressure is far above that of the environment to which the cells are normally accustomed. When, for any reason, a highly hypertonic fluid is admitted to the stomach, then vomiting (or sometimes diarrhea) is the result. This is well seen after the ingestion of strong salt solutions, large quantities of sweetmeats, or strong peptone solutions, or over-indulgence in alcoholic or strongly saccharine beverages. In the process of mastication and swallowing, the salivary glands are stimulated to the pouring out of a copious secretion, and the organism has developed here, too, another mechanism to aid in the dilution of the stomach contents—namely, the sense of thirst, the proper satisfaction of which, by the ingestion of a sufficient quantity of water, tends to the dilution and consequent lowering of the osmotic pressure of stomach contents. If these protective mechanisms fail in carrying out their object, then the organism responds by rejecting the contents of the stomach altogether by reflex mechanism of vomiting.

Thus in man, at any rate, and undoubtedly in the case of the other mammals, the maintenance of a constant osmotic pressure of the blood by means of the kidneys and excretory organs is in a remarkable manner and to a considerable degree aided by the possession by these higher animals of the senses of taste and thirst. (Of man and mammals we can speak with certainty, although it is legitimate from common experience to postulate that all vertebrates at least possess these senses too). The power to vomit is possessed by most animals. Amongst ruminants and solipeds it is a rare occurrence, but, after all, the nature of the food of these animals would undoubtedly exempt them from the necessity of ever rejecting the contents of the stomach. But with man and the carnivores particularly, the nature of their food, particularly the liability to putrefaction and ptomaine formation, renders the existence of the power to vomit a necessity, altogether excluding considerations of the osmotic pressure of stomach contents, which pertain chiefly to man, who, by an abuse of his intelligence, perpetrates dietetic errors from which the lower animals are protected by their instinct, and senses of taste and smell.

In connection with those hypertonic fluid foods which are normally admitted to the stomach of man, the following observations of mine

are of interest. A definite volume of beer was taken which gave a Δ of 2.246, evaporated to dryness and then calcined. The ash was then taken up in the same volume of distilled water, and dissolved almost completely, leaving a small residue of calcium carbonate, which probably existed in the beer as the soluble calcium salt of some organic acid. This watery extract gave a Δ of 0.026°C.; and similarly with the juice of the orange—

Δ of juice	0.990
Δ of aqueous extract of ash	0.132

These experiments are analogous to what occurs in the body. The saccharine and alcholic constituents of the food are rapidly absorbed and burnt off, or stored in the body as inert substances (cf. glycogen), while the saline constituents are left to play their part in the osmotic pressure phenomena in the body. Thus we see that the kidney is constantly called upon (in marine forms always and generally in land mammals as well) to excrete inorganic salts, which tend to produce a rise in the osmotic pressure of the blood, and thus the urine is generally hypertonic. Prima facie, this means work done, and hence in metabolism experiments this work done should be included in the energy balance sheet, for in some cases the amount of energy thus expended may attain considerable dimensions when converted into terms of heat value or mechanical work.

We thus see that in the evolution of the race there has been a steady growth of the tendency of the individual to become independent of its environment (and therefore not compelled to change in response to alterations in that environment) by means of maintaining through the coördinated and integrative action of all its organs, constancy in the action of its vital parts.

The removal of its vital organs from the disturbances of function which must of necessity follow alterations in the physical and chemical properties of their environment, which in the higher animals are dependent on those of the circulating fluid, was the first great advance, and ensured for the organism the better and more efficient action of these organs, and afforded a distinct impetus to higher specialisation and greater independence of external environmental change. Thus, the beginning of the development of the firm resistant bony skeleton in place of the soft cartilaginous framework, and the formation of a high type of tissue from a simple one which this advance implies, most probably began to take place at a time in the history of the

race when the cartilaginous fish was leaving the sea and taking to the mud of estuaries, where it most probably also developed the mechanism for maintaining the salt ratios and osmotic pressure of its blood a constant. . . . .

Of course in considering this problem due consideration must be given to the method of 'give and take' which is exemplified in all evolutionary processes. Thus could be explained any unaccountable differences in vascular development or higher development in parts of the nervous system in some of the lower animals, and as analogies may be taken the loss of the alimentary canal in intestinal worms and the degeneration of the organs of smell in man when he assumed the erect posture.

Osmotic pressure of liquid foods.[5]

	NO. OF DETERMINATIONS.	AVERAGE OSMOTIC PRESSURE (Δ).
Beverages.		
Coffee (sweetened) (2 tbsp. sugar in ordinary breakfast cup)	2	0.342
Tea infusion (2 tsp., about 12 cc., tea leaves in 200 cc. boiling water, infused 5 minutes)	3	0.050
Tea (with milk and sugar) (100 cc. infusion, 50 cc. water, 25 cc. milk, 10 gm. sugar)	3	0.457
Tea, second infusion (200 cc. more water added to leaves from first infusion, allowed to stand 35 minutes)	2	0.025
Lemon juice and water (33 cc., juice of 1 lemon in 250 cc. distilled water)	3	0.124
Lemon juice and water (100 cc. diluted juice and 1 tsp., 5 gm., cane sugar)	2	0.486
Lime juice and soda water (commercial product)	2	1.266
Beer (draught beer) A	2	2.408
Beer (draught beer) B	2	2.248
Beer ash extract (30 cc. of B dried and calcined, 30 cc. distilled water)	2	0.026
Wine (75 cc. kept between 77° and 80°C. for 35 minutes and boiled 7 minutes to get rid of alcohol	3	3.240
Foodstuffs.		
Treacle (and water) (1 part to 7 parts water)	1	1.730
Peptonized milk (a commercial brand) (3 parts milk, 1 part water, peptonized 20 minutes, with 1 oz. cane sugar to 1 pt. milk)	2	0.654

[5] Average values calculated from the fuller data reported by J. L. Jona, loc. cit., pp. 242–248.

Osmotic pressure of liquid foods.[5]*—Continued.*

	NO. OF DETERMINATIONS.	AVERAGE OSMOTIC PRESSURE (Δ).
Foodstuffs.—Continued.		
Peptonized milk (a commercial brand) (2 parts milk, 1 part water, peptonized 20 minutes, sweetened)	3	0.628
Peptonized milk (a commercial brand) (4 parts milk, 1 part water, peptonized 20 minutes)	2	0.547
Vegetable soup (carrot 100 gm., parsnip 110 gm., turnip 55 gm., spring onion 47 gm., celery 25 gm., parsley 12 gm., water, 1,500 cc., cooked 2½ hours, strained, unsalted)	3	0.373
Vegetable soup (above soup with 4 per cent salt)	1	2.757
Vegetable soup (above soup with 2 per cent salt)	1	1.536
Vegetable soup (above soup with 0.8 per cent salt)	2	0.853
Vegetable soup (above soup with 0.75 per cent salt)	1	0.780
Vegetable soup (above soup with 0.33 per cent salt). (All salted soups tasted too salt except last)	3	0.584
Beef tea (6 cc. meat extract in 1,000 cc. water, unsalted)	3	0.140
Beef tea (above with 2.5 per cent salt)	3	1.626
Beef tea (above with 1.25 per cent salt)	3	0.885
Beef tea (above with 0.625 per cent salt)	3	0.544
Beef tea (above with 0.416 per cent salt). (Sample with 0.625 per cent salt had satisfactory taste)	2	0.417
Beef tea (6 cc. meat extract in 1,000 cc. boiling water)	1	0.160
Beef tea (salted to suit taste of "A")	2	0.330
Beef tea (salted to suit taste of "B")	2	0.329
Beef tea (oversalted)	1	1.922
Sugar Solutions.		
Dextrose solution (salivated) (100 cc. of 10 per cent dextrose solution taken in mouth in sips of 25 cc. each, kept in mouth ½ minute, with ½ minute intervals between sips)	1	1.156
Dextrose solution (10 per cent, salivated)	2	1.067
Dextrose solution (5 per cent)	1	0.566
Dextrose solution (5 per cent, salivated)	3	0.534
Cane sugar solution (salivated) (20 gm. in 150 cc., 13.3 per cent, 100 cc. treated like dextrose solutiona bove, 7 cc. saliva added to 100 cc. sugar solution. There was an after secretion for several minutes, 13.3 per cent)	1	0.868
Cane sugar solution (salivated)	2	0.790

[5] Average values calculated from the fuller data reported by J. L. Jona, loc. cit., pp. 242–248.

Osmotic pressure of liquid food.[5]*—Continued.*

	NO. OF DETERMINATIONS.	AVERAGE OSMOTIC PRESSURE (Δ).
Fruit Juices.		
Lemon (140 gm. yielding 40 cc. strained juice)	3	0.939
Orange (135 gm. yielding 50 cc. strained juice)	3	1.100
Orange (225 gm. yielding 110 cc. strained juice)	2	0.991
Orange juice ash extract (30 cc. juice dried and calcined, 30 cc. water. Small undissolved residue was chiefly calcium carbonate)	2	0.133
Pineapple juice (fresh Queensland fruit)	3	1.462
Coconut "milk" (nut yielded about 150 cc.)	3	0.519
Peaches (300 gm. fruit, 5 stoneless, yielding 180 cc. strained juice)	4	1.089
Apricots (formed pulp only, no juice obtainable)		
Plums (formed pulp only, no juice obtainable)		
Cherry plums (500 gm. fruit yielding 250 cc. strained juice)	3	1.032
Tomato (350 gm. fruit yielding 80 cc. juice)	3	0.527
Apples (300 gm. fruit yielding 30 cc. juice)	3	1.194
Gooseberries (300 gm. fruit yielding much pulp, 10 cc. juice)	3	1.352
Cherries (250 gm. fruit yielding 105 cc. juice)	3	2.244
Grapes (250 gm. fruit yielding 160 cc. juice)	2	3.251

[5] Average values calculated from the fuller data reported by J. L. Jona, loc. cit., pp. 242–248.

H. SOPHIE NEWCOMB MEMORIAL COLLEGE

(See Frontispiece)

The dining room of the Domestic Science Department of the H. Sophie Newcomb Memorial College, Tulane University, New Orleans, La., is interesting to the students and friends of the college because it is an example of the coöperation of its art school. It is a north room with old-fashioned white woodwork and walls of soft deep yellow above the platerail, with gray-green below which tones in well with the black-green of the highly finished oak furniture. This furniture was designed by an Art School senior and is thoroughly good.

The electric dome, the keynote of the room, with its purple grapes and green leaves on a soft yellow background was not only designed but made in the pottery department, where the china was painted to harmonize with it. The fine Newcomb embroidery on Russian linen for table service and day service also shows the grapevine, while on the plate-rail many fine pieces of Newcomb pottery show their beautiful blues and greens and coppery tones against the plain paper. The large water color painting of the college grounds, which hangs above the mantel, is the work of a graduate student.

The views of the old live oaks, the gray walls of the main building, and the drifting clouds seen through the linen scrim of the unshaded windows add greatly to the charm of a room which serves well its purpose for the pleasant gatherings held in it. It is dignified and satisfying, a pleasure to the Art School as well as to the domestic science department.

SCHOOL LUNCHES AT BASEL, SWITZERLAND.[1]

GEORGE NESTLER TRIOCHE.

In Switzerland, as in nearly all European countries, school lunches, when organized by the state (canton) or by the cities, are free. At Basel, the state and the city are all one, that is to say, the canton or state is formed by the city proper and a few suburban places, such as Riehen. This canton is called Basel Stadt (Basel City); the surrounding country forms another canton (Basel Country). The following information refers only to the former. The estimates of the canton for 1912 state the expenditures for school lunch work to be as follows:

(1) For distribution of milk and bread (to the Pestalozzi Society), Frs. 2700. This society is taking care of poor scholars. It buys bread and milk with the funds contributed by the state.

(2) For distribution of milk and bread (to the Community of Riehen[2]), Frs. 300. At Riehen, the "Schoolhouse" distributes milk and bread by means of the contribution which the state places at its disposal.

(3) Breakfast to poor scholars of special classes, Frs. 2000. This contribution will be increased.

(4) To the Soup Commission, Frs. 7050.80. A private commission by the name of "Commission of School Soup Distribution" arranges for the preparation of the soups. The soup is cooked early in the morning and at 9 o'clock sent over to the schoolhouses. Every day, 8–12, scholars of each class receive at 9 and 10 o'clock one plate of soup. The expenses are covered by the following receipts: State contribution, Frs. 7050; Collection made between all scholars, Frs. 12,000; Sundry donations by merchants, etc., Frs. 5000; about Frs. 24,000. Distribution of soup from the beginning of December to the end of March. Composition of soup: Rice, peas, oatmeal, lentils with a little boiled meat in it.

(5) For the expenses of summer vacations for poor children, Frs.

[1] These particulars have been compiled from information forwarded to the writer by the Superintendent of Public Instruction of the Canton of Basel-Stadt. (Erziehungs-Department, Basel-Stadt, A. No. 7021, den 19 Dezember 1912.)

[2] This is a suburban village, which is in fact a part of Basel-City.

7000. A private committee collects the money needed to send several hundred children to the country for a summer vacation; to this the state contributes Frs. 7000. The children are divided into groups, each of which is under the supervision of a teacher.

(6) Home for children at Langenbruck, Frs. 2000. Consumptive school children are taken care of by a private committee which sends them to a sanatorium at Langenbruck.

COLLEGE COURSES IN GARDENING.

A Letter from England from a College Girl to Her Alma Mater.

"Wouldn't it be fine to have a course in gardening given at the college? It is such a glorious profession for girls, and so much more profitable and interesting than ordinary athletic games. When I see how even the cottagers here use and beautify every inch of their land, it makes me ashamed to remember that I was nowhere in school or college, taught to develop the ground on which I stood. Most city people do the best they can with their lawns in front—but why are they content with lawns when they could have flowers, and why aren't their back yards full of small fruit bushes and vegetables and pretty borders of flowers instead of step ladders and wash-tubs and ash piles and rubbish and weeds, weeds, weeds! What a vision of loveliness could be made of the tract of land the college has received if I could be turned loose in it with a couple of dozen enthusiastic girls, and as many spades and forks and rakes and barrows and trowels, etc., etc., etc. Why, with an hour a day for a college year they would transform that waste land into a paradise which would supply the college with all its flowers and half its vegetables.

"With a lady gardener in charge that tract could be used for this purpose until the new library or whatever it is can be built. At present the college seems to turn out 99 per cent teachers of whom a large per cent chuck the whole thing and marry in a few years, and spend the rest of their lives wishing they had learned something along with general culture which would help them to be good wives and mothers and homemakers. Do start with gardening as requiring the least equipment and from it build up more fully the domestic science department to supplement the pedagogic department. Let the domestic science class live in the Bush house and run it like a house, and work it themselves in relays, along with their other class-room work."

REFRIGERATORS.

HERMANN T. VULTÉ.

Assistant Professor of Household Chemistry, Teachers College.

The object of refrigeration, of course, is preservation. That will depend on at least three conditions—low temperature, ventilation and dryness.

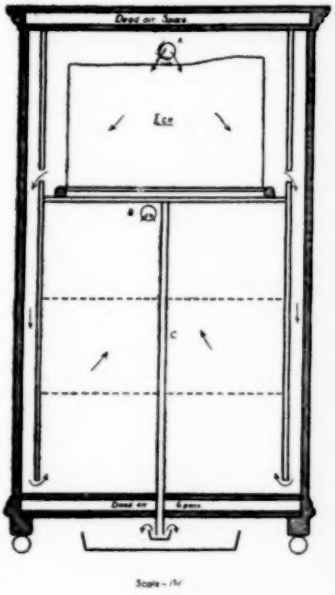
Low temperature can readily be secured by the melting of ice, either naturally, or by the influence of some chemical salt. Ventilation is accomplished by ordinary means. The dryness depends upon the rapid change of the air in the ice-box, and in a certain sense is connected with the question of ventilation, although attempts have been made on a small scale to absorb moisture by chemical substances, such as chloride of calcium. They are not efficient or satisfactory on a small scale.

In accompanying diagram notice double wall construction on the sides, showing the air inlet space at *A*; circulating spaces indicated by the small arrows; direction of the air currents, and the exhaust hole at *B*; also the dead air space at the top and bottom of the box; drain pipe, *C*, carrying the water from the ice to the pan underneath the box.

The entire construction of this box is in wood, interior walls being made of spruce or pine; the outer walls of the same material, or of some more expensive wood, like oak, if desirable. The interior surfaces of the interior walls are covered with sheets of rolled zinc, also the bottom of the box. The bottom of the ice compartment is a sheet of galvanized iron; tub *C* of sheet zinc. All of the interior spaces through which the air circulates are heavily covered with a good quality of waterproof varnish.

The theory of the working of this box is that air enters through the aperture *A*, and coming at once into contact with the ice, is chilled. Necessarily it is heavy when cold, easily passes out through the small openings in the side and down through the double wall; is delivered into the bottom of the box, and then, passing up through the dotted lines, which indicate perforated metal shelves (of zinc or of galvanized iron), the air current being warmed by absorbing heat from articles

on the shelves, gradually rises and passes out of the box at *B*. It is necessary to have small draft regulators at the points *A* and *B*, for obvious reasons.



The advantages of a box constructed in this way would be, first, the low cost of construction, placing it within the means of almost everyone; secondly, ease of keeping in order—metal surfaces need hardly any attention except washing at weekly intervals, with weak soda-and-water solution. Drain pipe, *C*, which may become contaminated with refuse matter from the melting ice, but can easily be cleaned by using a wire—or better, a wire with brush end. There are no open joints in the interior of this box. All the edges of the metal surfaces can be securely soldered at a very reasonable cost.

The disadvantages of a porcelain lined refrigerator may be summed up as follows: high cost; impossibility of fastening the porcelain slabs or plates securely to the wooden framework. These pieces of porcelain are necessarily small, thereby making a large number of joints. These joints can only be formed with substances like cement, or plaster of paris, neither of which is a satisfactorily adhesive substance between porcelain and wood. In case any one or more of the porcelain slabs should become detached, it is very difficult, almost impossible, to replace it making a tight surface. Of course the shelving can never be made of porcelain. Recourse must be had to the wooden shelf, or shelf made of sheet metal, both of which are used in the other type of box.

Glass lined refrigerators have been proposed, compartments of which are made in one piece, without joints. These would seem to be ideal, except from the danger of breakage through carelessness, and the exceedingly high cost of the material which is practically prohibitive.

In all refrigerators that are used by butchers and grocerymen in general, you will find that the preference is given to the wooden con-

struction, largely on account of its cheapness, also to some extent, on the score of its durability and ease of keeping clean.

There would be no reason why the wooden surface could not even be coated with paint, as long as the food material was not coming in direct contact with it. Of course the varnish coating, although more expensive, is more satisfactory, although I rather incline to the cleanliness and bright appearance of the light painted surface, for instance, white or some shade slightly off the white, allowing one at a glance to form an opinion in regard to the cleanliness of the surface.

Any objection that might be urged against wood from the effect of dampness will not have much weight if the atmosphere in the box is kept reasonably dry. With that objection it seems to me that every drawback has disappeared.

Much of the objection to the old-fashioned wooden boxes has arisen either because they were improperly constructed—that is, did not provide for sufficient and rapid ventilation—or because for a long time the lined or filled box was used—that is, that in which the wall spaces were filled in with charcoal or some other absorbent material of the same nature. For a very short period of time these charcoal lined refrigerators absorb deleterious odors and gases given off by the foods, but unfortunately they retain them and become the resting place of numerous colonies of bacteria, which would give rise to active dangers, only restrained by the comparatively low temperature within the box, no provision ever being made to withdraw the charcoal and replenish it with new material.

As will be seen from the drawing, all of that objection has been done away with; fresh air is constantly circulating through the double walls. These are the best possible conditions that we can provide for apparatus of this type.

One objection will always be offered to a box of this construction, the fact of its using considerably more ice than the unventilated box. It will be necessary to convince householders that desirable low temperature under sanitary conditions can only be obtained by the expenditure of ice; and you cannot insist on that point too strongly.

WHAT OUR FOREFATHERS COOKED AND ATE IN 1810.[1]

What did the American people eat in the year 1810? What kind of food was cooked in the big open fireplaces under the swinging cranes, or baked in the old-fashioned brick ovens? Were the housewives of the early days of the last century able to obtain the culinary results of the present age, and was the food either wholesome or palatable? There fell into the writer's hands recently a little leather-covered book, which in a manner answers these questions. At least its 180 pages contain a great deal of information, not only regarding the food materials which were available in 1805, but how they were prepared.

It is reasonable to believe that foodstuffs were pure in those days, and we know that many kinds of food were very cheap, compared with the soaring prices of 1910. If materials were both cheap and good, one need not be surprised that the cookery was prepared in such lavish quantities, or that a bag of flour that would last an average family a week in this age was used up in one baking of pies, with other ingredients in proportion.

Perhaps the receipts in this little volume in the main do not differ greatly from formulas that may be found in similar books of today, though it is interesting to note that some materials considered indispensable in modern cookery are conspicuous by their absence. Flavoring extracts are not mentioned, nor are soda and cream of tartar referred to anywhere, while baking powders were unknown. It may be noted, also, that housewives in 1810 were able to worry along without the thousand and one ready-prepared substances and food ingredients that are obtainable today from grocers everywhere. Some of the food prepared after these receipts was doubtless rich—too rich, and too highly seasoned—but the frills and the fancy dishes do not appear, everything being for the most part on the order substantial. The cooking school was a thing of the future, and the imported French chef had not arrived.

[1] Reprinted from Nat. Grange Off. Organ, 5, No. 25, p. 14, 1910.

In lieu of flavoring extracts they used quantities of rose-water, orange flower water, almonds, corlander seed, and the juice and rind of fresh oranges and lemons, and they introduced wines and brandies into all forms of cookery without stint. Constant use was made of the kitchen garden herbs, and they ran the gamut of the spices. These were absolutely pure, however, for the cook usually ground and sifted them as they were required. Even perfumes were sometimes employed, as in "whipt cream"—musk at that. This receipt and those which follow are copied verbatim:

"Whipt cream. Take a quart of cream and the whites of eight eggs, beaten with half a pint of wine, mix it together and sweeten it to your taste with double-refined sugar; you may perfume it (if you please) with musk or ambergum tied in a rag and steeped a little in the cream. Whip it with a whisk and a bit of lemon peel tied to the middle of the whisk, take off the froth with a spoon and put into glasses."

There was no greedy beef trust, nor were there cold storage houses in 1810, and meats cost from 3 to 5 cents per pound—poultry, 6 cents. Over one-third of the book is taken up with quaint directions for preparing all kinofds meats, fish and fowls, and with the making of soups. There are elaborate rules for roasting and stuffing, for broiling, boiling and stewing, and for making hashes and fricassees. Sweet herbs were introduced into nearly everything cooked in the meat line, and even fish; wines were used in preparing meats and high seasoning and spicing were the rule. Here is one of the receipts for "Alamode Beef:"

"Take a round of beef and stuff it with half pound pork, half pound butter, the soft of half loaf of wheat bread, boil four eggs very hard, chop them up; add sage, parsley, summer savory, sweet marjoram and one ounce cloves pounded, chop them all together with two eggs very fine, and add a gill of wine, season very high with salt and pepper. Cut holes in your beef to put your stuffing in, then stick whole cloves in the beef, then put in into a two pail pot with sticks at the bottom; if you wish to have the beef round when done put it into cloth and bind it tight with 20 or 30 yards of twine, put it into your pot with three quarts of water and one gill of wine. A large round will take three or four hours to boil."

Among the quaint receipts is one given "to dress a beefstake sufficient for two gentlemen, with a fire made of two newspapers. Let the beef be cut out into slices, and laid on a pewter platter. Pour on water sufficient to cover them, salt and pepper well, cover with another platter inverted; then place your dish upon a stool bottom upwards,

the legs of such length as to raise the platter three inches from the board; cut your newspapers into small strips, light with a candle and apply them gradually, so as to keep a live fire under the whole dish till the whole are expended, when the stake will be done; butter may then be applied so as to render it grateful."

Eggs were 10 or 12 cents per dozen, and they were used in combination with all foods. As individual dishes, however, there is but one receipt for cooking eggs, as follows:

"To broil eggs.—First put your salamander into the fire, then cut a slice round a quartern loaf; toast it brown and butter it, lay it in the dish and set it before the fire; poach seven eggs just enough to set the whites, take them out carefully and lay them on your toast; brown them with the salamander, grate some nutmeg over them and squeeze Seville orange over the whole. Garnish with orange cut in slices."

The salamander was a utensil formed with a plate of metal which after heating in the coals was held over the cooked dishes to brown the them, for, as before stated, a large part of the cooking of a hundred years ago was done in an open fireplace, while the ovens were the old-time brick affairs like many of the baker's ovens of today—the wood fire being built in the oven and the coals and ashes raked out when the prepared foods were ready for baking.

"To fricassee a hare.— Boil the hare with apples, onions and parsley; when it is tender shred small, then put thereto a pint of red wine, one nutmeg, a little pepper and salt and two or three anchovies; stir these together with the yolks of twelve hard-boiled eggs, shred small; when it is served up put as much melted butter as will make it moist; garnish with some of the bones and the whites of the eggs boiled hard and cut in halves."

In lieu of chemicals for raising all kinds of breads, cake, etc., receipts for such foods call for "emptins" (emptyings)—the home-made yeast of our grandmothers' time, which was kept in a stone crock, always ready for use. The only chemical mentioned in the book is pearl-ash, referred to in three formulas for gingerbread. Very little is said concerning bread and biscuit making, as everybody was supposed to know all about such simple matters, but there are several pages devoted to rusk. Here is the receipt for

"Rusk No. 5.—One pint of milk, one pint of emptins, to be laid over night in sponge; in morning melt three-quarters of a pound of butter, one pound sugar, in another pint of milk; add lukewarm and beat till it rises well."

"P. C. Rusk, No. 4," called for four pounds of flour and fifteen eggs. In another "six to eight pounds of flour are used with a pound each of butter and sugar and a dozen eggs."

"Rusk No. 6—Three-quarters of a pound of butter, one of sugar, twelve eggs, a quart of milk, as much flour as they will wet, a spoon of cinnamon and one gill of emptins. Let it stand till very puffy and light; roll into small cakes and let stand on oiled tins while the oven is heating. Bake fifteen minutes in a quick oven; while hot wash the top with sugar and whites (of eggs)."

Invalids must have had good stomachs in those days to be able to eat the following "diet bread;" "One pound sugar, nine eggs beat for an hour, fourteen ounces of flour, spoonful of rosewater, one of cinnamon or coriander; bake quick."

Breakfast food formulas—like the snakes of Ireland—are a minus quantity, for the cereal fad of this age is not foreshadowed even by a single mention of the word oatmeal. They probably substituted pie, for the breakfast pie habit still survives in parts of New England today —and possibly elsewhere. The pastry of the times must have been toothsome, and a great variety of meat, fruit and even vegetable pies and tarts was made, the crusts oftentimes being more elaborate than the filling. There are a dozen or more receipts for making these "pastes." No. 9, royal paste, "excellent for tarts," was as follows:

"Rub half a pound of butter into one pound of flour, four whites (of eggs) beaten to a foam, two ounces of fine sugar; roll often, rubbing one-third and rolling two-thirds of the butter is best."

From the quantities of ingredients required to make No. 2, the receipt must have been for the Thanksgiving and Christmas batch of pies. "Rub six pounds of butter into fourteen pounds of flour, whites of eight eggs; add cold water and make a stiff paste." No. 8, "good for a chicken pie," was made with one and one-half pounds of suet to six of flour, and a spoonful of salt wet with cream; add two and a half pounds of butter to be rolled in, six or eight rollings in.

A lemon tart required over two weeks to make. The receipt begins: "Take six large lemons, rub them well in salt, put them in salt and water and let them rest two days, change them daily in fresh water fourteen days." After being duly salted, and properly freshened, they were boiled two or three hours. Six pared, cored and quartered pippins were boiled in another gallipot until tender; to the lemon liquor was then added one half of the apple, with one pound sugar, and boiled fifteen minutes. After preparing the royal paste described

above, laid in shallow pans, a spoonful each of the combination and the remaining half of the apple was dropped in the pans brushed with melted butter; and after sifting on superfine sugar, baked in a gentle oven.

An "Apple tart" was composed of stewed apples, Madeira wine, sugar, rose water, orange juice and cinnamon, baked in a plain waste. Doctor Wiley would doubtless consider the above a "blend" and misbranded.

The long list of puddings embraces bread, flour, rice, Indian, fruit puddings in variety, potato, carrot, squash, "pompkin," currant, orange and lemon, with several "plumb" pudding receipts. One of the last named is as follows:

"Take half a loaf of bread, on which pour three pints boiling milk; when cold add six ounces of ground rice; mix the bread and rice together with half a pound of plums, one pound of currants, four ounces of beef suet cut fine, eight eggs, half gill of rose water, one gill wine; lemon peel, sugar and nutmeg as may be agreeable."

MRS. RICHARDS AS A CORRESPONDENT.

We print the following letter, a copy of which has just been furnished us, as giving some idea of the breadth of Mrs. Richards' interests. Many, many such letters could be brought as evidence of her human sympathy and helpfulness.—ED.

January 21, 1904.

My dear Mrs.———,

I have not been as unmindful of your kindness as my silence seemed to show. Our classes in my subject have been very large and the fact of not getting back until just as term opened has hampered me so that only this week when the term is over and the laboratory closed am I in a condition to clear up my desk and table. My office has been a den, and at home my own table is piled high. So many interests also beg for just a few minutes' time. The Public School Conference, the Household Aid Co., have taken many hours. The plan of sending out hot dinners, the bother of a retainer of the heat, and the opening of a new lunch room, the cafeteria, where one helps one's self, and the thousand and one other fads that this city is always going into, drag one into things in spite of all resolutions to the contrary.

We have kept very well. We walk around the Pond [Jamaica Pond] 35 minutes every morning, and then have breakfast and go to our work. Professor's book is really out and we are so glad. He is now going over his notes for the class. His latest amusement is taking photographs before sunrise. The little time-book he goes by did not have data for this and so he is getting it.

The Institute is busy and quiet, no great excitement about anything. "Shall we move?" still haunts us. I think of you when I get my luncheon, as I did today, at our little vegetarian restaurant here by the Back Bay Post Office, a very good little place, but I am sure to wish them open on Friday night.

I am busy over the new editions of my textbook and the Cost of Living and with my research assistant who is writing the Economics of Consumption.

I ran away to St. Louis the last of the year to the meeting of the American Association for the Advancement of Science and to see about several other things. I came back by way of Chicago and the School of Education which is most interesting. I was caught in the cold snap and got into Boston at 3:15 a.m., with the thermometer several degrees below zero, at our house 16°. We were 6 hours late. I went across the street to the hotel, and as my family did not expect me until the morning no one worried.

I was interested to see that in St. Louis where the average working man is thrifty French or German, the shop windows were not filled with the tempting display of marked down prices and bargains and trashy goods which our eastern cities have gone into. The store front has to be all plate glass and color and sparkle to *tempt* the passerby, implying that she *is temptable*. It is this element of temptation which comes in so strongly in our economics. But I must not go on preaching.

I have been so glad of all that you have sent me. I hope I have not neglected a question of yours. I am clearing up and your letter is for the moment mislaid but as I have had this envelope addressed for six weeks I am going to fill it now and send it on its way. Your children would have been amused if they had seen Professor and me this morning wading in 2 to 3-foot snow drifts for our morning walk. Now it is rainy but we have had much snow.

Give our love to the children. I wish I could have seen them at work.

Sincerely yours,

ELLEN H. RICHARDS.

ADMINISTRATION SECTION.[1]

A report on help employed in Mount Royal College, Calgary, Alberta, Canada, was secured by Miss M. Garrick, housekeeper at Mount Royal College, in which she compared their number of employees with those in other colleges. The summary is as follows:

	RESIDENTS.	EMPLOYEES.	EMPLOYEES TO RESIDENTS.
Mount Royal College, Calgary	97	15	1 to 6.3
Alberta College (1st hall)	107	11	1 to 9.7
Alberta College (2nd hall)	116	10	1 to 11.0
Brandon College, Manitoba	138	17	1 to 8.0
McDonald Hall, Guelph, Ont	110	15	1 to 7.0
Whitby Ladies College, Whitby, Ont.	140	20	1 to 7.0

[1] Notes from the discussion at the Administration Section, Lake Placid, June 1912.

In discussing facilities for keeping food hot a suggestion was made that trucks loaded with dishes might be run into hot closets built in the same manner as the laundry drying closets, and when the dishes are to be used the trucks could be taken into the kitchen or into the dining room. It was noted that the central kitchen plant with the delivery of hot food in trucks to the various buildings is common among certain hospitals; for example, the Institute for the Feeble-Minded at Faribault, Minnesota and the State Hospital at Kankakee, Illinois; also that the system of trucks for carrying hot food and dishes during the serving of meals is used at Holloway College, England. In one institution three-compartment vegetable dishes made of aluminum are found to facilitate service as well as to retain heat.

The cleaning of silver in an institution is an important economic problem. The plan of placing silver in an aluminum pan containing a solution of common salt and soda was compared with the polishing of silver by hand; both the time element and the question of the comparative wear and tear of the chemical action against that of the friction of polishing were considered.

EDITORIALS.

The Syllabus of Home Economics.

Under this title the first publication for the Ellen H. Richards Memorial Fund is now published and for sale. It will be remembered that one of the activities of the Lake Placid Conference of Home Economics was the consideration of the nomenclature of the subject, and the American Home Economics Association, which grew out of the Lake Placid Conference, continued its work in this as well as in other directions.

At the Second Annual Meeting of the Association in 1910 a Committee on Nomenclature was appointed; it began its work at once and has reported to the Association at intervals. It was the conclusion of the Committee that the name "Home Economics" is the most satisfactory name so far proposed for the subject as a whole, although other terms may better fit the course offered in some particular institution. The definition later adopted by the Association is the following: "Home Economics as a distinct subject of instruction is the study of the economic, sanitary and esthetic aspects of food, clothing and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people."

In accordance with what seemed the best as well as the most general usage, the Committee proposed that the subject of Home Economics be divided into four main divisions, namely, (1) Food, (2) Clothing, (3) Shelter, and (4) Household and Institution Management, a proposal which received the approval of the Association.

At the Fourth Annual Meeting of the Association, the Committee on Nomenclature was continued under the name "Committee on Home Economics Syllabus." in order that it might prepare a Syllabus of the general subject based on the definition and principal subdivisions mentioned above, which should bring together and group in logical order the topics to be included in an ideal course of instruction. The plan of arranging the material finally adopted subdivides each of the first three of the main divisions—Food, Clothing, and Shelter—into (1) Selection, (2) Preparation, and (3) Use; and the fourth main division—Household and Institution Management—into (1) Material Basis, (2) Social Contacts, Activities, and Functions, and (3) Aims and

Results. These headings are further divided and subdivided with reference to economic, scientific, sanitary, esthetic, and other aspects under a variety of headings.

It is believed that persons familiar with the subject will find more advantages than disadvantages in the attempts at uniformity which have been made, and it is hoped that the teacher and student will overlook the occasional use of an unfamiliar word or of an old term given a meaning somewhat different from that usually attached to it since in many cases no term sufficiently broad or exact seemed to be in general use.

In preparing the Syllabus much emphasis has been laid upon the theoretical, historical, and general aspects of the different topics and upon the relations of chemistry, physics, mathematics, biology, economics, esthetics, and engineering to the different subdivisions. This seems desirable since these topics often receive much less attention than they merit even in courses of instruction designed to have a cultural value.

Use will undoubtedly show that there are numerous omissions, however, it is expected that additions and changes will be made in subsequent editions. As it stands, the Syllabus represents not an outline for a course of instruction but rather a classified list of topics from which cultural, technical, or vocational courses can be made up by the teacher whether the grade of instruction be primary, secondary or advanced.

As brought together in this form an attempt that has never before been made, the subject is seen to be far-reaching in its scope, it leads the student along the paths of literature, art, and general culture and provides as well instruction along specific lines. The conclusion seems just that rightly combined with languages, literature and other long-established subjects, Home Economics can and does provide a well-rounded course of instruction of full cultural value and does not sacrifice anything essential to a broad education. Those who have given the subject most attention believe that in addition it has a special value in preparing directly for life and its problems.

Mrs. Richards was particularly interested in the question of nomenclature and classification of the subject of Home Economics and the Syllabus, and as now presented to teachers, students and others, for use and for criticism, appropriately appears as the first publication of the Fund which bears her name.

In preparing the Syllabus, a number of teachers of Home Economics and related subjects have been consulted and valuable sugges-

tions have been received. The literature of the subject has also been carefully examined.

The Richards Memorial Fund

The Richards Memorial Fund Committee reports that encouraging words keep coming in from every section of the country, and contributions from schools, colleges, and clubs continue to be received. Many could not have their Richards Day celebrations in December and so the stories of recent celebrations of the day are still reported. This is as it should be. Let us all work away that the Memorial Fund may be a generous one and worthy of her whose name it bears! Home Economics Day will be celebrated December 3, 1913. Let every school and club take notice and begin to plan accordingly. A few Richards Calendars, we understand, can still be secured.

A Note of Warning.

We wish to call especial attention to two articles in this number, that of Dr. Barker "Management of Children Predisposed to Nervousness," and that of Prof. Wm. A. McKeever "The New Child Labor Movement," because they sound a needed warning as yet hardly heard. In this day of sparing the child every pain and sorrow, of insisting first and foremost on a happy, untrammeled youth, we are facing a real danger, that needful training and discipline will not be started in time to affect character, to enable the individual to "endure hardness" in the words of St. Paul, and to meet the requirements of the world for self-control and that habit of application which is necessary to success in any field of action.

The admirable laws that have been passed in many states to prevent the exploiting of children in industry have laid a new responsibility on home and school. The hours upon which untimely and exhausting labor must not encroach, offer an opportunity which should receive the most thoughtful attention of parents and educators.

Housekeepers' Section.

The chairman of the Housekeepers' Section of our Association, Mrs. Lynden Evans, has chosen her coöperating committees, and they are consulting as to the best method of starting their department in the JOURNAL. Their plans will be presented at the June meeting of the American Home Economics Association and will be discussed and voted upon. The officers of the Association realize that if they start this department, they will have entered upon a very impor-

tant phase of the work requiring careful deliberation, and no further decision can at present be announced.

Administration Section.

The papers presented at the Administration Section of the American Home Economics Association in June, 1912, and which have appeared in various issues of the JOURNAL, have been bound together as reprints and are now on sale at fifty cents (50 cents) per copy. The following is a list of these papers:

Marketing facilities and their relation to the cost of living, Edward Ewing Pratt; The laundry problem in New York City, Helen Woodford Pratt; School lunches and medical inspection, Ira S. Wile; Practice fields in household and institutional management, Emma H. Gunther; A rational method in the practice field for students in dietary administration, Florence R. Corbett; The diet kitchen, Mabel C. Little; The housekeeper dietitian in the hospital field, Mary A. Lindsley; The coöperation of dietitian and physician, E. Grace McCullough; The relation of household administration to public utilities, Martha Bensley Bruère; Scientific management in the household, Frank B. Gilbreth; Report of the committee on uniform accounting for institutions; Waste accounting systems and basic dietary ration tables, Charles S. Pitcher; General development and present status of the school feeding movement, Louise Stevens Bryant; The rural school warm lunch, Mary L. Bull; Report of the New York school lunch committee; Elementary school lunches under school department direction, Buffalo, N. Y., Mary E. L. Small; Some data regarding food supply and sale in a Men's Club, C. F. Langworthy; Commercial laundries in New York City, Wm. C. Rogers; Institution laundries; Penny lunches in Rochester, N. Y., Alice M. Hotchkin; Educational need and value of lunches in elementary schools; Wanted, a test for "Man Power," Ellen H. Richards.

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BOOKS AND LITERATURE.

Any books or periodicals mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS at the publisher's price.

A Laboratory Manual of Dietetics. By Mary Swartz Rose, Ph.D. Assistant Professor, Department of Nutrition, Teacher's College, Columbia University. The Macmillan Company, New York, 1912. Cloth, 12 mo., pp. viii,127. $1.10 net.

In the preparation of this laboratory manual of dietetics the author has undertaken a unique piece of work, and has carried it out in a way that promises very satisfactory results. The work should meet with a hearty welcome from teachers of dietetics who have, in the unsettled state of the science, been forced to grope their way more or less in the laboratory. This book, being the direct result of Dr. Rose's experience in teaching dietetics, has much practical value, either as a manual to be placed in the hands of students, or as a reference book containing many helpful ideas for the teacher who prefers to present her own scheme of laboratory instruction to her classes.

In the preface the author states the three-fold purpose of the book: First, to explain the problems involved in the calculation of food values and food requirements; second, to explain the construction of dietaries; third, to furnish reference tables which will minimize the labor involved in such work without limiting dietary study to a few food materials.

This three-fold purpose is well carried out in the three parts into which the book is divided.

Part I, pages 1 to 16, "Food Values and Food Requirements," is a brief discussion of (a) The composition of food materials, by elements and by food principles; (b) The function of food, food being considered as a source of energy, as a building material, as a regulator of body processes; (c) The food requirement, which is considered first from the standpoint of the total energy requirement at different periods of life, and second from the standpoint of providing a balanced diet. This discussion of the food requirement is emphasized by various tables of scientific standards such as, Symond's tables of height and weight of men and of women at different ages; Von Noorden's allowance per kilogram; Atwater and Benedict's hourly factors; Atwater's estimate according to degree of muscular activity; Tigerstedt's estimate according to occupation; Average energy requirement of children per kilogram of body weight; Average weights and heights of children at different ages; Von Noorden's reductions in energy requirements in old age.

Part II, pages 17 to 70, "Problems in Dietary Calculation," presents in concise form the solutions of twelve typical dietetics problems, as follows:

I, Studies in weight, measure and cost of some common food materials; II, Relation between percentage composition and weight; III, Calculation of the

fuel value of any given weight of food materials; IV, Calculation of the weight of a Standard or 100-calorie portion; V, Food value of a combination of food materials; VI, Distribution of foodstuffs in a standard portion of a single food material; VII, Calculation of a standard portion of a combination of food materials; VIII, Analysis of a recipe; IX, Modification of cow's milk to a required formula; X, Calculation of the percentage composition of a food mixture; XI, The calculation of a complete dietary; XII, Scoring of the dietary.

In Problem I, the student, considering a given food, is taught to differentiate between the fuel values of the *gram*, the *ounce*, the *pound*; to compare the *bulk* of a 100-calorie portion with its *weight* in grams and ounces; to determine the fuel value of the *market units*, *i.e.*, *quart*, *package*, etc. In connection with the above *total* fuel values of the various units of the food under consideration, the *fractional fuel values* due to each food principle are emphasized. Table XIII, containing the above data in part, regarding 158 foods, and containing blank spaces to be filled in with the results of the student's own deductions, presents an exceedingly valuable piece of work. Table XIX, containing data for 332 foods similar to that in Table XII, should be mentioned in this connection. Problems II, III, IV and VI have to do with a *single* food material, and in all these cases the application is made to milk as a type; while Problems V, VII, VIII, are concerned with *combinations* of food materials, the application being made to a one-egg cake. Problem IX explains the method of preparing modified milk, while problem X is an extension of problem V. In Problem XI the student is taught the intricacies of working out a complete dietary according to a proposed standard. Finally an interesting dietary score-card is proposed in Problem XII.

In Part III, pages 71 to 115, seven valuable "Reference Tables" are presented as follows: XV, Refuse in food materials; XVI, Conversion tables—grams to ounces; XVII, Conversion tables—ounces to grams; XVIII, Conversion tables—pounds to grams; XIX, Food values in terms of standard units of weight; XX, Ash constituents in percentages of the edible portion; XXI, Ash constituents in standard 100-calorie portions.

Tables XX and XXI are reprints from Dr. Sherman's "Chemistry of Food and Nutrition."

The appendix, pages 116 to 120, containing a plan of a dietetics laboratory together with classified lists of equipment, is a valuable part of this book.

Undoubtedly, not all teachers would present the laboratory work and problems of dietetics from the point of view of the author, but the methods indicated are very suggestive and the tables in connection with Problem I seem to the writer particularly valuable. The general division of the points in the Dietary Score-Card could well serve with advanced students as a basis of discussion from which each might evolve an original score-card.

Finally, although any teacher is bound to work out her own methods of instruction in class room or laboratory, yet Dr. Rose has rendered a distinct service to the teaching of dietetics in presenting her own very suggestive plan of laboratory instruction. Also she has provided the teacher of dietetics with an exceedingly valuable reference book in small compass. The usefulness of the book would be further increased by the addition of a complete bibliography.

Manual of Personal Hygiene. Edited by W. S. Pyle. W. B. Saunders Company. Philadelphia. $1.00. Fifth edition, revised and enlarged 1912.

The demand for a fifth edition within twelve years of first publication is sufficient recommendation for this book of hygiene. Most important of the differences between this latest and the fourth edition is the addition of a chapter on "Food Adulteration and Deterioration," by Dr. Harvey W. Wiley. Although this discussion of pure food is very important and excellent, it and a large part of the previously added chapter on "Domestic Hygiene" reach quite beyond the commonly accepted limits of personal hygiene. It is true that the authors of these two chapters that have been added to the original book have worded them so as to make more or less of a personal appeal; but so might almost all sanitation and bacteriology be presented. The field of hygiene is too vast for any satisfactory presentation of general hygiene from the personal point of view; and it seems to the writer of this review that a manual of personal hygiene is most useful if it is limited to the rules for healthful living which each individual may apply to himself, leaving to books on public hygiene or sanitation such problems as those of pure food and quarantine, which require collective, communistic, and especially legal control. This is not a condemnation of the excellent book under consideration, but simply a regret that it has been expanded beyond its original and logical scope by inadequately extending into the enormous field of public hygiene.

The Principles of Organic Chemistry. By James F. Norris, Ph.D., Professor of Chemistry in Simmons College. McGraw-Hill Book Company, New York, 1912. Pp. xv, 579. $2.50.

This text bears evidence to the wide experience of the writer in teaching the elements of organic chemistry to beginners in the subject. He has been unusually successful in bringing the fundamental principles of the science into sharp relief without sacrificing unduly the detailed consideration of compounds of practical importance. Although the subject is developed on broad, general lines, the author seems to have borne in mind, more than is customary in texts on pure organic chemistry, the needs of students whose major interest in the subject lies in its application to physiology and nutrition. The comparatively full treatment of fats, carbohydrates, and proteins makes the book well adapted for use in courses on organic chemistry for students of household economics.

The Hygiene of Exercise. By Anna Leonard Muzzey, Instructor, Sargent School of Physical Education. Published by the Health-Education League, 8 Beacon Street, Boston. 5 cents per copy.

This is number 26 in the series of the Health Education League booklets. As in the previous publications of this League much valuable information and advice are given in this small pamphlet of 18 pages, and the facts are presented in a way to be remembered. No attempt is made to go into a detailed discussion of exercise, but the reasons for the need of such exercise, its influence upon and benefits to both mind and body are briefly and clearly stated. A part of the book is devoted to practical suggestions for the average man and woman in regard to hygienic exercise, and those activities possible to the average person, such as walking, are emphasized.

Household Science and Arts. By Josephine Morris, Supervisor of Household Science and Arts in the Boston Public Schools. American Book Company, New York, 1912, pp. 224. $0.60.

This book which is written by a teacher of experience primarily for teachers, contains in addition to general directions for conducting cooking classes, about 330 well-formulated recipes presented in good literary form. It does what every elementary text book of the kind should do—places more emphasis upon carefully supervised practice than upon precept and theory, as a means of leading pupils to habits of cleanliness, to good taste in serving food, and to good table manners. As the author says in the preface: "While children may understand a full statement of what they ought to do and of what they ought to avoid, *good kitchen habits can be secured only by the teacher's persistent demand for the ideal.*" The book, besides promising to be helpful to teachers, is one which pupils, even those of small means may well be encouraged to buy and to take home, for it contains in concise and convenient form directions for preparing most of the dishes that constitute a diet of rational simplicity and variety.

Basic Principles of Domestic Science. By Lilla Frich. Muncie Normal Institute, Muncie, Indiana. $1.50.

A series of seventy-two consecutive lessons in cookery and related theory, divided into four semesters. It is suggestive in the variety of dishes mentioned in the practical part of each lesson as an application of basic principles. At times the relation of theory to practice is rather remote, and fails to fulfill the promise in the "Foreword" that "each lesson includes a page presenting the theory and a page outlining the practice, illustrating the principle involved." On the other hand, many essential points in theory cannot be paralleled by closely related practical work, and the author has succeeded in keeping a fair balance, a logical sequence and a systematic grading in manipulation. The individual recipes given at the close of the data for each semester are helpful, and the illustrations suggestive. The scientific data is not selected from the most recent government work and dietaries, but the material used is reproduced correctly. The book is equipped with a thorough index and several blank pages at the end of the work for each semester. It shows careful selection of material from many sources adapted to the demands of the class and the subject, but it leaves entirely to the reader the opportunity to incorporate in the lessons the outside interests which must form a part of every well-rounded domestic science lesson.

Lessons in Elementary Cooking. Mary C. Jones, Teacher of Cooking in the Public Schools of Brookline, Mass. Boston Cooking-School Magazine Company. Boston, 1912, pp. VI, 266. $1.00. By mail $1.08.

A text-book admirably suited for its purpose so far as literary style and manner of presentation of the subject are concerned. It is attractively illustrated, its recipes are skillfully selected, and it artfully introduces valuable lessons other than those directly involved in the subject of cookery. It treats, for example, of the avoidance of danger from fire, the obligation of picnic parties to leave grounds in good condition, and the duty of economizing food materials. There are some inadequate or misleading statements which have evidently been overlooked in proof-

reading and revision. On page 16, for example, fat is described as a fuel food, starch as a source of energy, and the proteids as tissue builders only.

Common Sense Care of Babies. By Mary Busby Austin. Indianapolis. $0.50.

This small book is indeed full of practical suggestions to the mother. The importance of cleanliness, of fresh air and good simple food for the mother is given proper prominence and the use of drugs discouraged.

The care of the child is explained with excellent sense and thoroughness. But the adherence to the two-hour period between feedings for the first six weeks and the regular use of cream and top milk for normal children show that the author belongs to the older school of pediatrics.

The Child's Day. By Woods Hutchinson. Houghton Mifflin Company, New York. $0.40.

Here is a book addressed to the young boy and girl under twelve, it would seem, to judge from the style and the illustrations. It would be interesting to know whether such books which seem to the older mind so clear as to statement and so attractive in style are really read and enjoyed by those for whom they are intended. The function of the skin, the processes of digestion, the care of the teeth, the importance of exercise and fresh air and sufficient sleep are all treated and amply illustrated.

The book closes with an excellent supplement made up of questions and answers on the contents of the book.

The Family in Its Sociological Aspects. By James Quayle Dealey, Ph.D. Professor of Social and Political Science in Brown University. Houghton Mifflin Company, Boston, 1912. Pp. 137. $0.75.

This little book makes no claim to being an exhaustive study of any aspect of the family. It is rather a confession of the faith of one sociologist in "the essential integrity of the American family" and of his belief that "there is a trend toward a highly ethical monogamous marriage." The confession is prefaced by an historical sketch of the family and of the institution of marriage, which is brief but is given in enough detail to show where the foundations of the writer's optimism lie and is followed by a well selected list of reference books. That there are "social conditions and forces which are so retarding the progress of the modern family that it would be comparatively easy to depict the situation so black that only pessimistic conclusions could be drawn" is not denied. "Sexual vices and diseases seem to be sapping the physique of the race and destroying mutual confidence and love in the domestic circle. 'Race suicide' and an alarming increase in the divorce rate seem to be closely allied factors in weakening the sanctity of home ties. The demand for the labor of women and children in poorly paid industries is ominous for racial vigor, and the crowded condition of modern urban environment weakens the ties of kinship and makes impossible the close domestic circle of homely fellowship."

Yet the author sees a way out of the difficulty and that, fortunately, by a path which leads, not backward, but forward. He does not say, even by implication, that "woman's place is the home" nor that higher education is disqualifying women for family duties. On the other hand he looks with favor upon the growing independence of women for he believes it to be "important that women, unhampered

by economic considerations, be allowed the determining voice in deciding who shall be the fathers of their children, in order to insure a free choice among those who are most vigorous physically, morally, and mentally."

"From the sociological standpoint the mere teaching or preaching of great principles makes little impression on most people unless they are living under conditions favorable to these principles." That conditions are growing more favorable to the attainment of a high ideal of family life is the conclusion reached. "Education is losing its artificial character and is once more seeking to ally itself with the home. . . . . It looks forward to the maturer life of its students and seeks to prepare them for civic and economic usefulness and domestic responsibilities. It trains them in personal hygiene, in sex morals, in the recognition of duty to state and society, and aims so to refine their personalities as to eliminate unconsciously the bestial elements derived from a lower civilization." The conspiracy of silence among church, school and home, with reference to prostitution and kindred evils, is being broken up. Righteous warfare is being waged against low wages which force undue postponement of marriage, against rapacious landlordism, against the exploitation of children in industry, and against those industries which "in their eagerness to produce results lose sight of the human element and fail to safeguard the life, health and morals of their employees." "In fact, throughout the entire social body associations innumerable are rising up, each agitated about some particular aspect of the social problem, but all unitedly filled with the belief that society must not rest satisfied with present conditions."

Students of home economics should read this book, which can hardly fail to show them that behind the bewildering array of modern movements, reforms, and associations which are making so great a demand upon the sympathies of conscientious people, as to threaten them with what Dr. Crothers has called "moral bankruptcy," there are constructive forces at work which bid fair to create nobler families and to build better homes.

Woman at Work. By M. Mostyn Bird. Chapman and Hall, London. 1911. 257 pages. $1.25.

An introductory discussion as to the position of women workers outside the home is good, and there follows a presentation in attractive style of the present opportunities open to English young women in manufacture, distribution, service, the arts, and philanthropy. The book will hold the attention of any young woman interested in the problems of choosing a vocation, and is the sort of reading to put in such a person's hands. Supplementing Perkins' "Vocations for the Trained Woman" it would help any American girl to find herself. The contrasts offered by English conditions (see the section on the bar-maid, there are 27,000 of them in England) being particularly stimulating to one vis-a-vis with the choice of vocation.

The United Irishwomen, Their Place, Work and Ideals. By Horace Plunkett, Ellice Pilkington and George Russell, with a preface by the Reverend T. A. Finlay. Maunsel and Company, Dublin, 96 Middle Abbey Street, 1911. Pp. 50. 6d. (12 cents).

This booklet of fifty pages will bring an inspiration to every home economics worker who has any conception at all of the national problem which the home

economics movement is facing. It ought to give our rural workers especially, courage to know that the women of Ireland are organizing for the improvement of country life. Coöperative societies, supplementary households, industries as poultry and bee keeping, market gardens, weaving, lace making, village improvement societies, progress in home economics itself, are all being sought out eagerly.

Economic Results of Cold Storage. By James Wilson. U. S. Department, Agricultural Reports. Government Document, 1911.

A special investigation was undertaken by the Department of Agriculture in which detailed information regarding the cold storage industry was collected by means of schedules submitted to the cold storage warehousemen, and prices were compiled from the literature of the subject for the last thirty years, with the special object of securing data regarding fluctuations in price before cold storage existed or was of considerable importance, and comparing such data with fluctuations in recent years during which the business has grown to large proportions.

On the basis of the information collected, such questions are considered as the length of time commodities remain in storage, the principal months when they are received, the percentage held for longer than a year, the average length and the costs of storage, the tendency to uniformity of prices throughout the year, speculation, and stored goods as a percentage of consumption.

As regards delivery, "The important observation to be made is that the receipts into cold storage are entirely or very nearly exhausted by the deliveries within ten months."

With respect to costs of storage, "It is evident that as the time of storage lengthens, the costs and their percentage of the wholesale price must be multiplied by the number of months. If the storage is for fifteen months, for instance, the cost per pound ranges from 5.273 cents for fresh mutton to 8.572 cents for butter, and is 8.898 cents per dozen for eggs; the costs for fifteen months range from 36.5 per cent of the wholesale price in the case of butter to 57.5 per cent in the case of fresh mutton.

"Approximately the wholesale prices of the commodities mentioned are increased by cold storage to the extent of the percentages just given"

Cold storage has influenced considerably the relative monthly consumption of commodities and has made it more even throughout the year.

"There has also been a change in relative monthly prices, due to cold storage. In the case of eggs the relative price has increased in the season of natural plenty and diminished in the period of natural scarcity." . . . .

"In the cases of both butter and eggs the annual price level has been raised by cold storage, for a reason apart from the costs."

With respect to the tendency to uniform prices throughout the year, an examination of the data collected regarding the range of prices "substantially indorses the other process, in pronouncing in favor of a tendency toward uniformity of prices with regard to butter, eggs, poultry, and fresh mutton, and of a tendency away from uniformity with regard to fresh beef and fresh pork."

With regard to the extent of the cold storage enterprise, the report points out that "This business of storing foods has grown to such proportions that consumers

have a rightful concern with its management for economic as well as sanitary reasons. From the returns made to this department by the cold-storage warehousemen, it is inferable that the fresh beef, fresh mutton, fresh pork, poultry, butter, eggs, and fish received into cold storage in a year amount to a weight of at least 1,000,000,000 pounds and very likely to a quarter of a billion more.

"The eggs received into storage in a year are approximately 13½ per cent of the farm productions; the fresh beef is over 3 per cent of the census commercial slaughter of cattle; mutton over 4 per cent of that slaughter of sheep and lambs; fresh pork 11½ per cent of that slaughter of hogs; and butter 25 per cent of the creamery production."

From the investigation as a whole, the following recommendation is made with reference to publicity:

"This is no indictment of the men who keep foods in cold storage except in so far a they sometimes speculate, nor need they be indicted for offenses in order that the public economic interest in their business may be made to appear. The foregoing matter, it may be supposed, establishes that. The man who places food in cold storage is somewhat in the situation of the man who forestalls the market. He may not attempt to do so, but the power may be a temptation.

"The affairs of such a business as this should have publicity. The public ought to know how much goods are in storage from month to month and what the movements of receipts and deliveries are.

"The food warehousemen should be required to send to Washington monthly reports containing the desired information. Here these reports could be promptly aggregated and the results could be given to the public on a previously announced day of the month, somewhat as the crop reports are."

Refrigeration and Food Products. Ber. II. Internat. Kältekong. Wien. 1. 1910.

A number of papers were presented at the Second International Refrigeration Congress at Vienna of special interest to students of nutrition and related matters.

Volume 2 contains the full papers and volume 1 the discussions, lists of members, and other general data.

Among others the following papers may be mentioned: Changes in the Physical and Morphological Character of Foods (Meat, Fish, and Milk), by Bützler; Cooling Houses and Other Buildings in the Tropics, by J. F. H. Koopman; Studies of the Preservation of Horseflesh by Cold and Its Use for Food Purposes, by A. Costa and N. Mori; The Effect of Low Temperatures on the Life Processes of Fruits and on the Rate of Fermentation of Cider, by H. C. Gore; The Refrigeration of Poultry and Eggs in the United States, by Mary E. Pennington; The Manufacture of Ice, by Sandras; An Improved Method of Packing Gutted Fish for Transport and Keeping it Fresh and Sweet for a Long Time, by A. Soelling; A New Application of Low Temperature to the Preparation of Concentrated Food Extracts or Solids, Particularly Milk Powder, by F. G. Lecomte and A. R. Loinville; The Preservation of Eggs by Low Temperature, by F. Lescarde; Importation and Exportation of Meat to Different Countries with Special Reference to the Use of Cold Storage and Frozen Meat in the Netherlands, by F. B. Löhnis; The Relative Value of Frozen and Refrigerated Meat for Food Purposes, Particularly with Reference to the Army, the Navy, and Public and Private Institutions, by H.

Martel; Refrigeration and Ventilation of Inhabited Places, by H. Torrance, Jr.; Relative Value of Frozen and Refrigerated Meat in General and Particularly for the Army and Large Groups, by H. Viry; Cold Storage and the Preservation of Fresh and Salted Meat, by L. van Wanjenbergh; Feeding the Nations, by A. de Wendrich; and Several Methods of Testing Cold Storage Insulation, with Comparative Results, by W. M. Whitten.

Mince Meat and Other Pure Food and Drug Topics. By E. F. Ladd and Alma K. Johnson. North Dakota Station, Special Bulletin 2, No. 51, 912.

In view of the fact that so much commercial mince meat is used the report of work carried on with such materials at the North Dakota Agriculture Experiment Station is of interest. Results are reported and discussed of the examination of 51 samples of mince meat and of miscellaneous food stuffs.

Of the samples examined, 19 contained no meat or less than 1 per cent (i.e., no meat fiber could be detected), 18 contained less than 3 to 6 per cent meat, and 14 less than 6 to 10 per cent. In cases of samples containing no meat fiber, "the flavor of meat was undoubtedly due to the presence of meat extract."

Seven of the samples contained glucose. Commenting on the results of their investigations, the authors state that "to add starch or glucose, making the same largely a constitutent of the [mince] meat, is equally deceptive. The fruit cannot legitimately be tomatoes, or apple skins, or waste material generally discarded as articles of food."

According to the authors' view, few of the preparations examined were entitled to be classed as mince meats under ordinary definitions.

The bulletin also contains a paper on the determination of ash of vinegar, by R. H. Remington.

The Elimination of Caffein: An Experimental Study of Herbivora and Carnivora. By W. Salant and J. B. Rieger. U. S. Department Agricultural Bureau of Chemistry, Bulletin 157.

According to the authors' investigations, caffein introduced subcutaneously, by mouth, or intravenously, is eliminated by rabbits and guinea pigs in part unchanged, in the urine, into the gastrointestinal canal, and into the biles. The amount recovered in the urine was in most cases approximately 6 to 10 per cent with rabbits and 6 to 11 per cent with guinea pigs. More caffein was eliminated by rabbits on a diet of carrots than of oats and hay, and similar results were obtained with guinea pigs. The reverse was noted with the elimination into the gastrointestinal tract, which was marked with both kinds of animals.

"The presence of very small quantities of caffein in the gastrointestinal contents of animals at the end of 48 hours points to its reabsorption into the circulation, since destruction of caffein is highly improbable on account of its resistance to bacterial action."

Cats and dogs were found to eliminate very small quantities, slightly over 1 per cent of the amount ingested. "The elimination of caffein begins soon after its introduction into the circulation. It was found in the urine from 15 to 40 minutes after its subcutaneous injection and in some cases continued to be present for 48 hours. The greater part, however, is eliminated during the first 24 hours, only small quantities being found in the urine later.

"The data herein presented lead to the conclusion that in the carnivora larger amounts of caffein are demethylated than in the herbivora, and that the resistance to caffein is inversely as demethylation, since it has been shown that caffein is much more toxic for carnivora than for herbivora. The mechanism of demethylation is in all probability utilized in the body as a means of defense against the deleterious action of caffein, being more active in organisms for which the drug is more toxic."

A bibliography is appended.

Some Experiments on the Relative Digestibility of White and Wholemea Breads. By L. F. Newman, G. W. Robinson, E. T. Halman, and H. A. D. Neville. Jour. Hyg. (Cambridge), 12, No. 2, 1912.

The chief purpose of the experiments reported was to study the relative digestibility of white and so-called "standard" breads. The tests were made with four men and were of seven days' duration.

"With regard to digestibility, the information given by the experiments may be looked upon as conclusive. The four individuals who ate the breads varied greatly in physical type, and the two forms of bread were eaten by all under strictly comparable conditions.

"As measured by energy and protein the degree of absorption in different individuals showed marked uniformity. In the case of phosphorus one individual showed a degree of absorption which was considerably less than that of the other subjects. The results as a whole lend no support to any extreme view as to the advantages or disadvantages possessed by standard bread; at any rate as regards the availability of the main, and more familiar food constituents.

"With respect to the availability of their total energy white bread and standard bread differ but little. With regard to protein there is a distinct advantage on the side of white bread, some 3½ per cent more of its nitrogen-content being absorbed.

"On the other hand, the experiments lend no support to the belief that the phosphorous compounds of bread of the "standard" type are worse absorbed than those of white bread, so that the former contains an appreciably larger amount, not only of total, but of available phosphorus. The ratio of available phosphorus to available nitrogen stands, in the case of the standard bread, nearer to the ratio present in efficient mixed dietaries, a circumstance, however, which becomes of practical significance when only bread forms a large proportion of a person's dietary."

The Number and Varieties of Bacteria Carried by the Common Housefly in Sanitary and Insanitary City Areas. By G. L. Cox, F. C. Lewis, and E. E. Glynn. Jour. Hyg. (Cambridge), 12, No. 3, 1912.

Results of examinations of 450 flies caught in different parts of Liverpool are reported.

More bacteria and more intestinal bacteria were found in flies caught in the congested and insanitary parts of the city than in the suburban areas. No pathogenic bacteria were found in flies caught in suburban areas. As many as 350,000 bacteria came from one fly struggling in a liquid.

"Flies caught in milk shops apparently carry and contain more bacteria than

those from other shops with exposed food in a similar neighborhood. The reason of this is probably because milk when accessible, especially in the summer months, is suitable culture medium for bacteria, and the flies first inoculate the milk and later reinoculate themselves, and then more of the milk, so establishing a vicious circle."

Bluebottles were found to harbor more bacteria than houseflies in an eating place opposite a slaughterhouse.

"In cities where food is plentiful flies rarely migrate from the localities in which they are bred, and consequently the number of bacteria they carry depends upon the general standard of cleanliness in that locality."

Flies rarely migrate far, hence local cleanliness is of value to the inhabitants of any portion of the city.

"It is clear that flies from the suburbs where infantile diarrhea is rare carry far less bacteria than those in the city where it is common. It was, nevertheless, impossible in the time at our disposal to correlate exactly the number or varieties of bacteria carried by flies in the city with the number of cases and deaths from infantile diarrhea in individual streets.

"As the amount of dirt carried by flies in any particular locality, measured in terms of bacteria, bears a definite relation to the habits of the people and the state of the streets, it demonstrates the necessity of efficient municipal and domestic cleanliness, if the food of the inhabitants is to escape pollution, not only with harmless but also with occasional pathogenic bacteria."

Fuel Oil. By J. B. Aleshire. War Department (U. S.), Report of Quartermaster General, 1912. p. 13.

A brief account is given of the results of tests with two systems of oil burning in two of the new barracks at Fort Winfield Scott.

The preliminary reports which have been submitted "indicate that 70 per cent savings in fuel can be made by the use of fuel oil. . . . . The installation of these burners does not require the modification of the heating and cooking apparatus to be such that it can not with slight change be put back for the use of coal, and steps will be taken to investigate the advisability of the use of fuel oil at all posts on the Pacific coast."

BOOKS RECEIVED

The Kitchen Fire and How to Run It. Samuel S. Wright, Fuel-Saving Expert. Scranton, Pa. $0.75.

The Story of Textiles. By Perry Walton. Boston: Lawrence and Company.

Candy-Making Revolutionized. By Mary Elizabeth Hall. New York: Sturgis and Walton Company. $0.75 net.

Health on the Farm. By H. L. Harris, Secretary of the Georgia State Board of Health. The Young Farmer's Practical Library. New York: Sturgis and Walton Company. $1.00 net.

Home Waterworks. By Carleton J. Lynde. The Young Farmer's Practical Library. New York: Sturgis and Walton Company. $1.00 net.

Institution Recipes. By Emma Smedley. Media, Pa. $1.25. By mail $1.35.

When Mother Lets Us Cook; When Mother Lets Us Help. By Constance Johnson. **When Mother Lets Us Cut Out Pictures.** By Ida Boyd. **When Mother Lets Us Sew.** By Mrs. Ralston. New York: Moffat, Yard and Company. $0.75 each.

Method of Race Regeneration. By C. W. Saleeby. New York: Moffat, Yard and Company. $0.50.

Increasing Home Efficiency. By Martha B. and Robert Bruère. New York: The Macmillan Company. $1.50.

A Book of Hand-Woven Coverlets. By Eliza Calvert Hall. Boston: Little, Brown and Company. $3.00.

School Feeding. By Louise Stevens Bryant. Philadelphia: J. B. Lippincott Company. $1.50.

NEWS FROM THE FIELD

University of Illinois.

The School for Housekeepers conducted annually by the Household Science Department of the University of Illinois was held from January 13 to 23, and proved to be very popular, as well as helpful. Over 350 women were in attendance, almost double the registration of the preceeding year. The program was varied, consisting of lectures, demonstrations, and discussions. No laboratory work was offered owing to the crowded conditions which must prevail until the completion of the addition to the Woman's Building. The subjects included Home Life in Many Lands, Landscape Gardening, Home Nursing, Physical Development of Children, Home Decoration, Care of Flowers, Planning Meals, Principles of Jelly Making, Cost of Food, Home Dressmaking, Home Millinery, and other topics. One day was taken up with a discussion of farm problems and many country women who were unable to be present for the two weeks came especially for this day. One evening meeting was held at which Miss Mary Snow of Chicago talked on The Responsibility of the Housekeeper Toward the Budget. Immediately following this two week's course, the department offers two extension courses at the University, one in cooking and one in sewing, open without prerequisites or fees. Twice as many applications were received as could be accommodated.

The Movable Schools offered by the department continue in demand. The whole field for extension work seems to be developing rapidly.

Iowa State College.

Short course work at Ames began six years ago with Miss Mary F. Rausch as the only instructor. The following year Miss Edith C. Charlton came to assist Miss Rausch. In December, 1908, Miss Neale S. Knowles took up the work with Miss Charlton, Miss Rausch having resigned. At that time two instructors were fully able to take care of the work. Since then, the demands for help have increased so rapidly that during the present year five regular instructors and a graduate assistant for each instructor have been required to take care of the work. Since September sixty-two regular short courses have been held, all of which except thirteen 3-day courses, were one week. Those in charge of the short courses are Miss Neale S. Knowles, Mrs. Louise H. Campbell, Miss Idaho Sutherland, Miss Jessie Austin Boyo and Mrs. C. B. McCoy.

In addition to the regular short course work many engagements have been met with institutes, clubs and other organizations.

At no time since the work began have the demands been so urgent, the attendance so great, and the interest so genuine.

Florida State College For Women.

The Florida State College for Women gave its first short course in home economics, from February 4 to 15. Miss Agnes Ellen Harris, Miss Palmers, and Miss Clark were in charge of the work. A schedule of the course which is very suggestive has been sent to the JOURNAL. Doubtless copies of this schedule may be obtained from Miss Harris, at the College.

Maryland Agricultural College

A short course in home economics was held at the Maryland Agricultural College from January 13 to 18. This is the second year such a course has been given, and as more than 150 registered it seems to show that the work is wanted in Maryland. At the end of the week a quiz on correcting improper menus showed that the class had learned much in dietetics and that the work was well understood. In addition to the courses mentioned in the December JOURNAL a course in First Aid to the Injured was given. A popular lesson was one in beef cutting. A specially prepared print of the bony structure was used that showed the shape of the bone in each cut. It is hoped that next year a longer course can be given.

Michigan Agricultural College.

The Michigan Agricultural College does not give a short course in the winter, but holds at the college what is called a "State Round-up Institute" for four days, the last of February. During the meetings several sessions are given to the work of the women. The program this year included the following topics: The physical woman, Mrs. Jas. W. Helme; How can we solve the problems of the farm home? Miss Ilena Bailey, of the Farm Management Division of the U. S. Department of Agriculture; The value of recreation, Mrs. C. L. Barber; They help everyone his neighbor, Miss Jennie Buell; The home education of the child, Mrs. Dora H. Stockman; Gardens and pets for children, Mrs. Myra V. Bogue. Special demonstrations for the women were also given; Plants and flowers for the garden and house; Ornamental trees and shrubs for lawn planting; The use of sale patterns; and Roasting of meats. The classes and laboratories of the Home Economics Department were open to all visitors, and there were also special exhibits illustrative of the work done by the students in this department.

University of Missouri.

The Department of Home Economics, University of Missouri, is still growing rapidly. It has been housed for the last two years in temporary quarters, an old hotel building in the town having been leased and made over for the purpose. While this has in many ways been unideal, it has served to give the additional room which has been very much needed. The total enrollment in this department for the first semester was about three hundred, representing an individual enrollment of over a hundred and fifty young women. This will be increased by about seventy-five new students the second semester.

This is the second year of the short course for women. This course lasts seven weeks, commencing the first of January. Twenty-one young women from the farm homes over the state are entered in this course.

At the annual meeting of the Missouri State Teachers' Association at Springfield in November, there was formed a branch association for the teachers of household arts and science to be known as the Missouri Association of Household Arts and Science. It is the plan of this association to divide the state into sections in order to facilitate more intensive work. Each section will have a chairman whose duty it will be to direct the work in her territory. It will affiliate with the Missouri Association of Applied Arts and Science on the one hand, and the Missouri Home-Makers' Conference on the other. Plans are being worked out by means of which it is hoped to stimulate the work all over the state. The officers for this year are: chairman, Miss Louise Stanley, Columbia; treasurer, Miss Anthony, Maryville; secretary, Miss Winona Woodward, Columbia.

New Jersey State College of Agriculture.

The New Jersey State College of Agriculture has given its first course in home economics during this past winter. Tuesday, January 14, was designated as a special day for the Home Economics Committee of the New Jersey State Federation of Women's Clubs, of which Mrs. Ephraim T. Gill of Haddonfield is chairman.

Simmons College.

During the year 1912–1913, 353 students were enrolled in the Department of Household Economics. The number is fast outgrowing the equipment. Mrs. Mary S. Woolman, who has been head of the Department of Home Economics at Teachers' College, has been appointed temporary head of the Department of Home Economics at Simmons. By reason of Professor Woolman's election as president of the Woman's Educational and Industrial Union in Boston, the affiliation between the two institutions will be strengthened. The Union offers itself as a practical laboratory for Simmons students and it is expected that the opportunities for work there will be increased.

Dr. Selskar M. Gunn of the Massachusetts Institute of Technology is giving lectures in sanitary science during the absence of Professor Sedgwick.

A new course under the direction of Miss Lundberg is offered to the students of home economics this year. By an affiliation with the settlement houses of the city the classes in cooking and sewing are put in charge of Simmons students. A senior is head of each class with a junior as assistant. The students are able to work out in their teaching the principles gained in education classes at the college.

At the celebration of Home Economics Day Dean Arnold spoke to several of the classes of the meaning of the day, and of the value of Mrs. Richards' contribution to home economics.

Bellingham (Wash.) Normal School.

Home Economics Day was observed December 3, 1912. To quote "in honor of Ellen H. Richards, the one to whom we are greatly indebted for the wonderful progress and steady growth of the household sciences and arts as a subject of instruction in our colleges, universities, normal and public schools, women's clubs, and other civic organizations.

"Mrs. Richards gave her life for the betterment of every home in country and city. 'Her gift to her country and its future has been an immeasurable educational influence in sanitation and the conservation of all natural resources and human forces.'"

Philadelphia Home Economics Association.

The Home Economics Association of Philadelphia did honor to the memory of Ellen H. Richards on Home Economics Day, December 3. Through the courtesy of Miss Mary E. Parker the meeting was held at the William Penn High School and the department of art and home economics was open for inspection. A group of the students served tea to the guests at the close of the meeting.

The president of the Association, Miss Imogene C. Belden, presided at the meeting and introduced the speaker. Miss Margaret Limerick read the sketch of Mrs. Richard's life based on Miss Hunt's biography, and Dr. A. P. Brubaker read an article from the *Biochemical Magazine* written by Miss Seaman. The latter gave a very complete account of Mrs. Richard's busy life from the scientist's viewpoint, and with these two very able sketches we feel that we have

some slight conception of what Mrs. Richards has done for the betterment of our American homes.

Howard University

The birthday of Ellen H. Richards was celebrated at Howard University, Washington, D. C., by the recently established Department of Home Economics, of which Mrs. Helen Brooks Irvin is director. The program included an address by Mrs. Julia W. Shaw, director of domestic science in the colored schools of Washington, upon the subject The Scope of the Domestic Science Teacher, and one by Miss Caroline L. Hunt, of the Office of Experiment Stations, on The American Home and its Debt to Mrs. Richards.

Michigan Agricultural College

Home Economics Day, December 3, was appropriately observed at the Michigan Agricultural College. The exercises were in charge of the honorary society, Omicron Nu, and took the form of an afternoon tea, with program. Invitations were extended to members of the Association of Collegiate Alumnae, the College Woman's Club, the senior women, and the faculty of the department. The program, which was participated in by both students and faculty, consisted of musical selections and papers on the life of Mrs. Richards and the progress in home economics. An old copy of Xenophon's *Economics* created much interest.

Missouri Home-Makers' Conference.

The sixth annual meeting of the Missouri Home-Makers' Conference was held in Columbia, January 14 to 17 inclusive. This was conceded by all concerned to be the most successful meeting yet held. A greater interest is shown each year, as is indicated by the increased attendance of women from all over the state.

The last two years especial attention has been given to the study of some of the industries which farm women may carry on in and about the home for profit, such as dairying, poultry raising, canning, and flower culture. The members themselves are leaders of these discussions and experts in the various lines are brought in to answer perplexing questions.

This year the conference was especially fortunate in having Miss Edna D. Day, who, as chairman of the Department of Home Economics, University of Missouri, was the founder of our conference. Miss Day spoke on "The Problem of the Girl."

One of the most interesting features of the program this year was a Child Welfare Exhibit under the direction of Mrs. C. W. Greene, state chairman of home economics. This was composed of material illustrating the different phases of child life. There was a permanent exhibit of clothing for children of all ages, games for children, books for children, pictures for the home, music for children in the home and each day the class in dietetics prepared and displayed a balanced daily ration for a child of a definite age. This exhibit was supplemented each day by a talk at the end of both morning and afternoon sessions on the various phases of the work in the interest of children. The culmination of the whole program was a baby show which came on Friday afternoon. The babies were scored by a special score card prepared by Dr. C. W. Greene of the department of physiology. The mothers were most interested in the score made by their babies, and many easily remedied defects were brought in this way to the attention of the mothers. This con-

test was so successful in every way that an attempt is to be made to introduce it into all the county fairs in the state this summer. A copy of the score card may be had by sending to Miss Nelle Nesbitt, corresponding secretary Missouri Home-Makers' Conference, Columbia, Mo.

Nebraska Home Economics Association.

During the last week in January the Association known as Organized Agriculture met in Lincoln, Nebraska. Two of the nineteen associations held their meetings in the city, the others met at the State University Farm, three miles distant from the city. At this time the Nebraska Home Economics Association held a two days' session in Home Economics Hall. Over 300 people attended the lectures and demonstrations. Mrs. A. E. Davisson was elected president of the Association for next year. Her connection with the extension department of the University will be valuable in increasing the correlation between the various lines of home economics work throughout the state. A short course, including laboratory work, is much desired and will be offered as soon as laboratory space and the size of the instruction force will allow.

Washington Business Woman's Exchange.

A Business Woman's Exchange was opened at 1338 G Street N. W., Washington, on January 15. The exchange is a coöperative organization of business women, and its object is to establish a bureau for business women where all matter pertaining to their business interests can center. We quote from the circular "The whole spirit of the organization is coöperation, each helping the other in every possible way. We do not guarantee a position to any one under any circumstances as it is obvious that such a guarantee could not be given in good faith. But every effort will be made to find satisfactory employment for every competent woman who will keep in touch with the office and make every reasonable effort in her own behalf." There are two classes of membership; first class, members eligible to positions paying $10 per week and upward; and second class, members eligible to positions paying less than $10 per week.

International Live Stock Show.

At the recent International Live Stock Show in Chicago demonstrations and lectures that proved a great attraction were given on the preparation of the cheaper cuts of meat. This feature was given prominence and was intelligently presented by the home economics departments of the Kansas and Iowa Agricultural Colleges, and large audiences gathered twice daily.

Brief Notes

The school board of Cheyenne, Wyoming, has voted to establish departments of manual training and domestic science in the schools, to be ready for the opening of the next school year.

Saco, Maine, has manual training for the boys of the eighth and ninth grades. Domestic science classes have been arranged for the girls of corresponding grade by the Educational and Industrial Union of the city.

Manual training and domestic science departments have been organized in the high school at Greenville, Texas.

It is proposed to unite the Iowa Manual Arts Association and the Iowa Home Economics Association, and to hold a joint meeting on some Friday evening in February or March, followed by separate programs and sessions on Saturday morning.

The first institute for teachers of Home Economics in Mississippi was held at the Industrial Institute and College, Columbus, Miss., February 26–March 1.

Mississippi Industrial Institute and College.

This institute was attended by teachers in the agricultural high schools of the state, and the city high schools. Representatives and speakers attended from Alabama, Tennessee, and Florida. The institute was held under the direction of Miss Mabel Ward, Director of Home Science at this college.

The Industrial Institute and College also offers two short spring courses of six weeks each. These courses are planned for the country teachers who wish to do school improvement work, or to offer some industrial training in connection with grade work. Short courses in cooking will be given especially for teachers who wish to do summer work in connection with the tomato club work now so important in the state.

The Industrial Institute and College offers a special two years' course for teachers and this course furnishes the teachers for nearly all the public schools in the state.

Massachusetts Agricultural College

The Extension Service of the Massachusetts Agricultural College has made another distinct advance by the addition of Home Economics work to their courses. Miss Laura Comstock, for the past four years head of the Home Economics Department in the University of Maine, has been appointed to fill the new position.

Professor Comstock was reared on a farm in New York State. She attended country and village schools and has taught in country schools, normal schools, and has done university work. She is a graduate of Buffalo Normal School and of Pratt Institute, and brings to this important work in Amherst a knowledge of rural life and interest in it, and the best of scientific training.

Miss Comstock will begin her work at Amherst July 1 next with courses in the Summer School. After this is completed she will organize work with teachers in the public schools; give instruction in the Extension Schools; arrange the programs for Farmers' Week and the Summer Conference; organize work in canning in the Boys' and Girls' Clubs; and give lectures and demonstrations before Granges, Women's Clubs, and other organizations.

Conservation on the Farm.

The Long Island Railroad Company which conducts two agricultural experiment stations on Long Island, is making some experiments, under the direction of Mr. and Mrs. H. B. Fullerton, of the value of the fruit that usually goes to waste on the average farm. From the report of the work done in 1911 we quote the following: "By waste or surplus we mean such items as the following: When tomatoes are sorted for shipment only the most perfect are selected, any that are over-ripe, or mis-shapen or split are withheld. In order to keep berry vines in full bearing they must be picked every day but Sunday. Saturday's pick, is, as a rule, too soft to ship on Monday. Fruit trees must be thinned in order to allow the best fruit plenty of room in which to develop. Nubbins of corn; a small pick of peas or beans; green tomatoes left on the vines when the frost comes, all have a commercial value when cooked and put in glass jars." At the end of the season the amount of material thus conserved numbered nearly 100 varieties and a total of 5507 glasses, jars and bottles. This we understand is on an average sized farm. But this experiment in order to be of real value should report on time used in caring for these surplus crops together with its value per hour.

ASSOCIATIONS.

Second Annual National Housing Conference.

The second National Conference on Housing in America held in Philadelphia December 4–6, 1912, was an instructive, enthusiastic and hopeful gathering. Philadelphia tried to be frank and honest with her delegates, and on the first day gave them a tour of the worst housing conditions in the city, and on the second day a tour of the improved housing conditions. This city is peculiarly fortunate in its small houses, and it was stated at the conference that it has the best system of these in the country. The model small house shown to the delegates, which rents as low as from $16 to $18 per month, contains six rooms with a bath, laundry and cellar. A swinging transom window opening into the dining-room from the first stair landing gives light in the entry, and the stairs are open to the living-room. The dining-room and the living-room are connected by a small arch way under the second floor landing. A commodious cupboard, containing an electric light is placed under the stairway. Two windows in the dining-room open onto an open space between the two houses. The kitchen, well lighted by a large window and also by a glass door into the laundry is provided with wall cupboards, porcelain sink, and a gas stove with a hot water boiler attached. The cellar stairs lead down from the kitchen. The laundry is a bright, cheerful room with windows on two sides and a glass door opening on the back porch. It is provided with two stationary tubs. A small lavatory opens on the stoop. The small back yard is surrounded by a tight board fence and has a cement walk with enough ground for a lawn or for a vegetable and flower bed.

Upstairs is a large, bright room, above the living-room, and another even brighter room over the kitchen and laundry. Between these two rooms there is a passage and, opening off from it, a small bedroom too small for even one person, and the bathroom. All the rooms are well provided with clothes closets. These houses are in West Philadelphia.

On St. Albans Street the parking and the small park between the fronts of the houses were noticeable. A small, narrow park enclosed by an iron fence runs the length of the block. The whole is in charge of a caretaker who receives 20 cents per month for his labor from each household. The houses have from eight to ten rooms, back yards, and rear driveway and rent from $23 to $25 per month.

"Converted" houses or tenements, shown on Diamond Street, were in course of construction from "brown stone front" houses, fairly comfortable for one family, into three-family houses or tenements. Less than 3 per cent of the buildings used for living purposes in Philadelphia are tenements. The majority of these are of the "Converted" type, i. e., former dwellings changed into three-family houses. Where these are changed in accordance with the provision of the law certain set standards of light, ventilation and sanitation are complied with. These buildings are typical of the better class of converted houses. They are to have a common rear yard, with grass and fountain. Each floor is an apartment, with

its private hall. The central room, made by partitioning the former parlor, must, in all such houses be handicapped in the amount of natural light. Apartments similar to these rent, depending upon the neighborhood, for sums varying from $25 to $45 and have from three to five rooms and bath. It appeared as if some of the most objectionable features of the old-time apartments were being introduced in these houses, such as narrow stairs, long dark halls and more or less dark intermediate rooms.

At Mifflin Place something was shown of the work of the Octavia Hill Association in the reconstruction of houses. This Association is a 4 per cent philanthropic stock company with a capital of $200,000 in shares of $25. It has a real estate investment of $168,634 and from records to date for the year 1912 will have a gross revenue on this investment of 10 per cent. Altogether it owns 127 houses for 178 families and controls 173 other houses for 390 families. Its aim is to improve insanitary areas by buying and reconstructing old dwellings. It acts as agent for properties whose owners will put them in a sanitary condition, for which service it charges 7½ per cent on rents collected. By the aid of women rent collectors who are also instructive sanitary inspectors, it maintains a high standard of cleanliness in all its buildings. Mifflin Place is a group of old buildings reconstructed and repaired. The large houses facing Front Street, now tenements, were colonial dwellings, and even now contain much fine woodwork and carved mantels. The smaller houses, dated 1748, are said to have been servants' quarters. This group shows the various types of buildings commonly found in old Philadelphia and includes the "band-box" houses, each having one room on a floor and being three floors high, and the "converted" tenement houses. In all there are 22 buildings housing 44 families. The gross rental is $4167. The owner does not wish to draw a revenue from the property but permits the earnings to go into improvements or to provide for the purchase of additional houses. When the area was first purchased the lots of the houses facing Front Street were 200 feet deep, some of the present buildings being back yard dwellings. The fences were taken down and the interior court made. The Association has renovated the houses, improved the gardens, and supplied annex kitchens, bathrooms, etc. At first,the back yards were all thrown into one, but the residents preferred more privacy and upon their request, small yards with substantial gates were fenced in at the back of each house. The rest of the center space was left for a playground which can be used only by the children living in these houses. A shelter was built, a sandbox constructed and swings put up. The residents keep the playground neat and once a week a caretaker puts all in order. One of the houses is used as a social settlement. The houses are never empty and the rents are always paid promptly.

The Girard Estate is a development scheme created by the Estate of Stephen Girard upon a tract of land in South Philadelphia. The houses are two and three stories high, mostly semi-detached, with yard space equal to that of the majority of suburban properties. They are of diversified architecture with ample porches, and contain from seven to nine rooms each. A central heating and lighting plant provides, through underground pipes and wires so laid as to be readily accessible at all times, ample light and heat for all the houses. Cabinet gas ranges are in all the kitchens, thus eliminating all dirt from coal and ashes. The living-rooms are on the second and third floors. The kitchen and the bathroom walls and ceil-

ings have a covering of "Sanitas" capable of being scrubbed with soap and water. Adjoining the kitchen is the laundry, fitted with stationary tubs, and supplied with running hot water from the central heating plant and unlimited in quantity. The houses are not for sale. The lawns and trees are cared for by a force of gardeners in the employ of the Estate. There is a sliding scale of rentals dependent upon the season of the year and fluctuating between $27 and $35.50 in the cheaper houses and between $43 and $57 in the more expensive ones. Heat is supplied and charged for from September to June. The cost is added to the rent at so much per month, the maximum rent being charged in December and January. These average $6 per month and are supplied at less cost than if provided by private individuals. There are no ashes to be disposed of. Each house is provided with two canvas bags for waste paper and this is collected every day. Once a week large quantities of paper which have accumulated are collected. The houses appear comfortable and present pleasing varieties in architecture. One naturally looks for a neighborhood house or recreation center of some kind, but none was to be seen. As the Estate is some distance from the amusement center of the city this seems a serious oversight upon the part of the management. The houses also are built near the street, sometimes with hardly any front ground, but this is a custom rather peculiar to Pennsylvania.

The daily luncheons, with three minute reports and discussions were an interesting feature of the conference. At the last luncheon, Jacob Riis spoke of his pleasure in seeing the interest in the housing conditions and in knowing that the people were getting down to the beginnings of troubles. The housing and building inspectors took an active part in the discussions and it is hoped that a closer cooperation will exist between the officials and the social workers. The tenement was condemned as usual and when Dr. Goler of Rochester was asked to speak on the model tenement, he quickly responded that there were no model tenements and never would be until there were model boils and other model sore spots. On Friday evening a banquet at the Bellevue-Stratford was given the conference by the city of Philadelphia. The Rt. Honorable James Bryce, British Ambassador to the United States, was the guest of honor. Dr. Dwight Hillis, of Plymouth Church, Brooklyn Heights, and Rudolph Blankenburg, the reform Mayor of Philadelphia, also spoke. Ambassador Bryce complimented the conference on its interest and work in the fundamental problem of housing and the care of the people. He spoke of the fact that the American cities are often wonderfully provided with parks and boulevards, but lack the little squares, the little air and garden spaces where the children and working people can breathe fresh air near their homes and can rest and play without going long distances. Dr. Hillis emphasized the humanitarian side of the work, the importance of neighborhood friendliness so that there be not such contrast between the inhabitants of the street and those of the alleys.

In his farewell address, Mayor Blankenburg bade the delegates God-speed in his hearty, fatherly German spirit and urged them to bring about new conditions through the reform of the municipal government, by making a government for all the people and by the people, or to use his good German word, just by folks without party lines and free from all state and national politics.

GWENDOLYN STEWART.

National Society for the Promotion of Industrial Education.

The sixth annual convention of the National Society for the Promotion of Industrial Education was held at the Hotel Walton, Philadelphia, on Thursday, Friday and Saturday, December 5 to 7, 1912. A strong program was presented and much significant work was accomplished.

In opening the discussion of the problem of training teachers for girls' work, Mrs. M. S. Woolman, president of the Women's Educational and Industrial Union, Boston, and Miss Florence M. Marshall, principal of the Manhattan Trade School for Girls, New York, submitted among the theses the following:

Vocational and trade schools, for girls have problems peculiar to themselves, and require especially trained teachers.

The method of conducting vocational education should, of necessity, differ greatly between such extremes as the school in the small community with no special industries and the great industrial city. One solution of the problem will not fit all needs.

The training of young women for industry in the large industrial cities presents two especially serious phases: (1) giving them adequate and industrial efficiency with ideals of labor, and (2) making them healthful, effective women fitted for the duties of the home.

To train girls to satisfactorily meet both problems takes time, and the pressure of early wage-earning makes short-time courses necessary because the pre-vocational preparation is not yet a good foundation on which to build; hence time must be taken for preparatory work.

We are not likely to secure the best teachers for teaching of the trades themselves by drawing them from the regular public school and giving them a short additional training in industrial processes.

The very best teachers and the most skilled trade workers are needed, but the combination is difficult to find at present.

In training capable trade teachers, we must expect a greater per capita cost than we are in the habit of giving to the ordinary school teachers.

There are many kinds of teachers needed for industrial education—pre-vocational, secondary-vocational, and trade schools—requiring, in varying degrees, household arts training; efficiency training in trade shops; trade academic training to further industrial intelligence; trade-art training for industrial purposes; training in hygiene in order to better conditions at present interfering with the success of wage-earners, either at trade or at home; practical social and economic information, and much investigation of industry to gain a knowledge of the needs of different localities.

Poor health in women who work is a menace to the future of the country. Special knowledge of hygienic living should be given all teachers who will work in industrial schools. A physician should be in constant attendance in such schools to coöperate with the teaching force and better prepare each wage-earner for the physical strain of the market.

The idea of woman as a home-maker should be ever present when training teachers, but it cannot be emphasized in the short-time trade school of industrial cities as it can in vocational schools in other localities.

Teachers trained in good domestic art courses, and who have taken trade experi-

ence, have been found to make good teachers for vocational schools or for the elementary and intermediate grades of dressmaking in a trade school.

Supervisors and directors of industrial schools should combine broadminded culture, knowledge of working conditions, interest in working people and their lives, modern, social and economic intelligence, the relation of domestic science to health and household arts of life, with a knowledge of trades fitting the supervisor to organize them and judge the value of the courses conducted in them.

AMERICAN HOME ECONOMICS ASSOCIATION CORNELL MEETING.

The American Home Economics Association will meet at Cornell University, Ithaca, New York, Friday, June 27–Friday, July 4. This time of year was chosen as one when the great majority of members are free to come, and a large attendance is expected. The general plan of the program is to provide for two sessions a day, leaving one-third of the time for the informal conferences, the walks and talks that are so valuable a part of the meeting.

It is hoped that special railroad rates will be granted, but no definite announcement can be made yet regarding this. Cornell University offers its hospitality with a cordiality that few could equal. Sage College will be opened, and a room there will cost 75 cents a day, while meals at the cafeteria will cost from 75 cents to $1 a day. The maximum cost at Ithaca therefore need not exceed $2 a day. Those who wish to engage rooms may do so by writing Department of Home Economics, New York State College of Agriculture, Ithaca, New York. There are single rooms and rooms with two single beds. In writing please specify which you prefer.

A detailed account of the program will be sent to all members, and will appear in the June number of the JOURNAL.